Schlumberger

Company: **Carrizo Oil & Gas Inc**

Well: **Barracuda 20−14−7−60**
Field: **Wildcat**
County: **Weld** State: **Colorado**

County: Weld
Field: Wildcat
Location: SWSW, Sec. 20, T 7N, R60W
Well: Barracuda 20−14−7−60
Company: Carrizo Oil & Gas Inc

Platform Express
Compensated Neutron
Litho Density

LOCATION

SWSW, Sec. 20, T 7N, R60W
SHL: 400' FSL X 600' FWL
Lat/Long: 40.5545 N / 104.1254 W

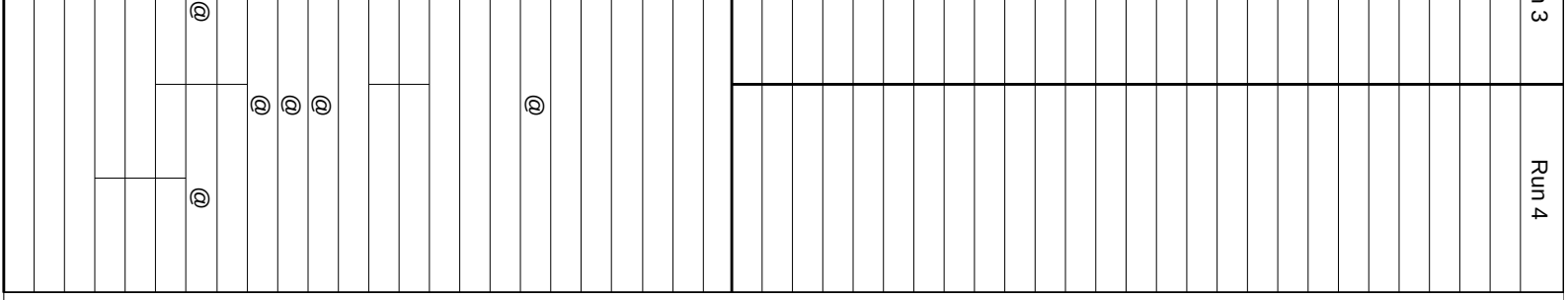
Elev.: K.B. 4991.00 ft
G.L. 4974.00 ft
D.F. 4990.00 ft

Permanent Datum: Ground Level Elev.: 4974.00 ft
Log Measured From: Kelly Bushing 17.00 ft above Perm. Datum
Drilling Measured From: Kelly Bushing

API Serial No.	Section	Township	Range
05−123−34387−0100	20	7N	60W

	Run 1	Run 2	Run
Logging Date	22−Nov−2011		
Run Number	1		
Depth Driller	7067 ft		
Schlumberger Depth	7037 ft		
Bottom Log Interval	7029 ft		
Top Log Interval	1426 ft		
Casing Driller Size @ Depth	9.625 in @ 1425 ft	@	@
Casing Schlumberger	1426 ft		
Bit Size	8.750 in		
Type Fluid In Hole	Water Based Mud		
MUD Density / Viscosity	9.2 lbm/gal / 45 s		
MUD Fluid Loss / PH	/		
MUD Source Of Sample	Mud Pit		
RM @ Measured Temperature	1.349 ohm.m @ 194 degF	@	@
RMF @ Measured Temperature	1.012 ohm.m @ 194 degF	@	@
RMC @ Measured Temperature	2.023 ohm.m @ 194 degF	@	@
Source RMF / RMC	Calculated / Calculated		
RM @ MRT / RMF @ MRT	1.354 @ 193 / 1.016 @ 193	@ / @	@ / @
Maximum Recorded Temperatures	193 degF		
Circulation Stopped Time	22−Nov−2011 1:00		
Logger On Bottom Time	22−Nov−2011 7:25		
Unit Number / Location	3021 Ft. Morgan, CO		
Recorded By	Heather Bennett		
Witnessed By	Phil Wilson		

	Run 1	Run 2	Run
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth	@		
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
MUD Density / Viscosity	/		
MUD Fluid Loss / PH	/		
MUD Source Of Sample			
RM @ Measured Temperature	@		
RMF @ Measured Temperature	@		
RMC @ Measured Temperature	@		
Source RMF / RMC	/		
RM @ MRT / RMF @ MRT	@ / @		
Maximum Recorded Temperatures			
Circulation Stopped Time			
Logger On Bottom Time			
Unit Number / Location	/		
Recorded By			
Witnessed By			



DEPTH SUMMARY LISTING

Date Created: 22−NOV−2011 7:35:28

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−39P LXS
Serial Number:	799	Serial Number:	1098	Serial Number:	6171
Calibration Date:	17−Mar−2011	Calibration Date:	26−Oct−2011	Length:	15500 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	100513		
Calibration Cable Type:	7−39P LXS	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	−4	Calibration RMS:	10	Rig Type:	LAND
Wheel Correction 2:	−4	Calibration Peak Error:	15		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	0.00 FT
Rig Up Length At Bottom:	0.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	2.00 FT
Tool Zero Check At Surface:	0.00 FT

Depth Control Remarks

1. All Schlumberger depth policy procedures applied
2. This is the primary depth reference
3.
4.
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1: FMI	OS1:
OS2: Sonic Scanner	OS2:
OS3: ECS	OS3:
OS4: HNGS	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
This is the first run in the hole.	
Toolstring run as per tool sketch.	
Matrix changes are as noted on the porosity print.	

Rig: Xtreme 19

Crew: Derrick Hunter, Ian Derry

RUN 1		RUN 2	
SERVICE ORDER #:	BHDJ−00135	SERVICE ORDER #:	
PROGRAM VERSION:	18C0−147	PROGRAM VERSION:	
FLUID LEVEL:	25 ft	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

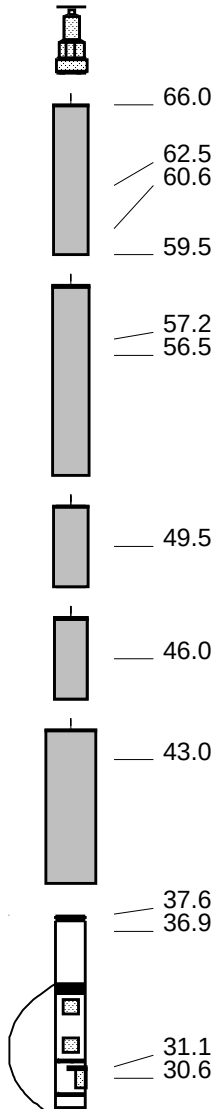
RUN 1 RUN 2

SURFACE EQUIPMENT

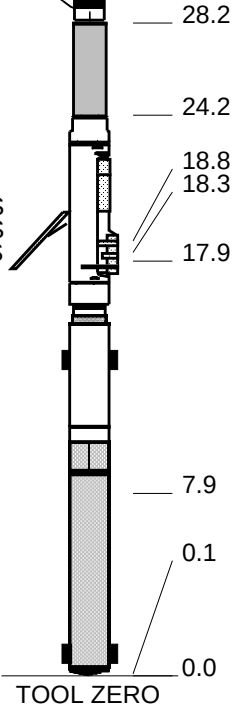
GSR−U/Y
NCT−B
CNB−AB
NCS−VB

GSR−U
WITM (EDTS)−A

DOWNHOLE EQUIPMENT

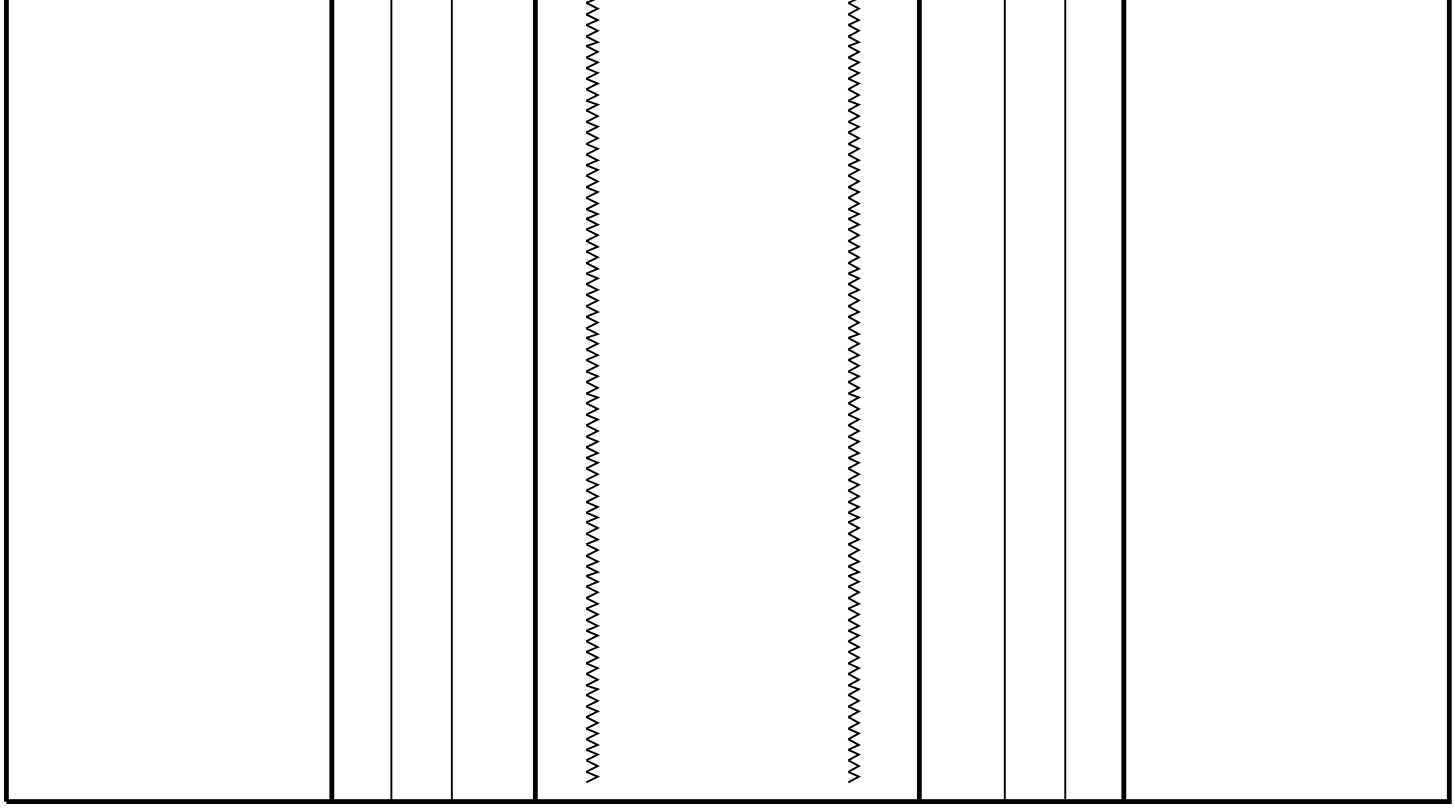


HGR
HRCC−B
HRMS−B
HRGD−B
GLS−VJ 5416
MCFL Device
HILT Nucl. LS 42767
HILT Nucl. SS 42767
HILT Nucl. BS 42767
AIT−H
AHIS−BA 216
AHRM−A
BOW−SPR
NPV−N



MAXIMUM STRING DIAMETER 5.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Production String	(in) OD	(in) ID	(ft) MD	Well Schematic	(ft) MD	(in) OD	(in) ID	Casing String
					0.0	9.625		Casing String
					1425.0	9.625		Casing Shoe
					1425.0	8.750		Borehole Segment



All Depths are Drillers Depths

Schlumberger

MAIN POROSITY LOG 5" = 100’

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22−Nov−2011 13:19	7042.5 FT	1309.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_004PUP	FN:3	PRODUCER	22−Nov−2011 14:04	7042.5 FT	1309.5 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 2353.29 F3

Cement Volume = 853.64 F3 (assuming 7.00 IN casing O.D.)

Computed from 7037.0 FT to 1426.0 FT using data channel(s) HCAL

OP System Version: 18C0−147

HILTB−FTB	18C0−147	ECS−HP	18C0−147
ECC−B	18C0−147	HNGC−B	18C0−147
HNGS−BA	18C0−147	EDTC−B	18C0−147

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	7042.5 14:05:30
	LIMESTONE	SANDSTONE	6562.0 14:05:45
	SANDSTONE	LIMESTONE	6272.0 14:05:54
MDEN	2.65 G/C3	2.65 G/C3	7042.5 14:05:30
	2.71 G/C3	2.65 G/C3	6562.0 14:05:45
	2.65 G/C3	2.71 G/C3	6272.0 14:05:54

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 10 F3
- Integrated Hole Volume Major Pip Every 100 F3
- Integrated Cement Volume Minor Pip Every 10 F3
- Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

NPOR Backup

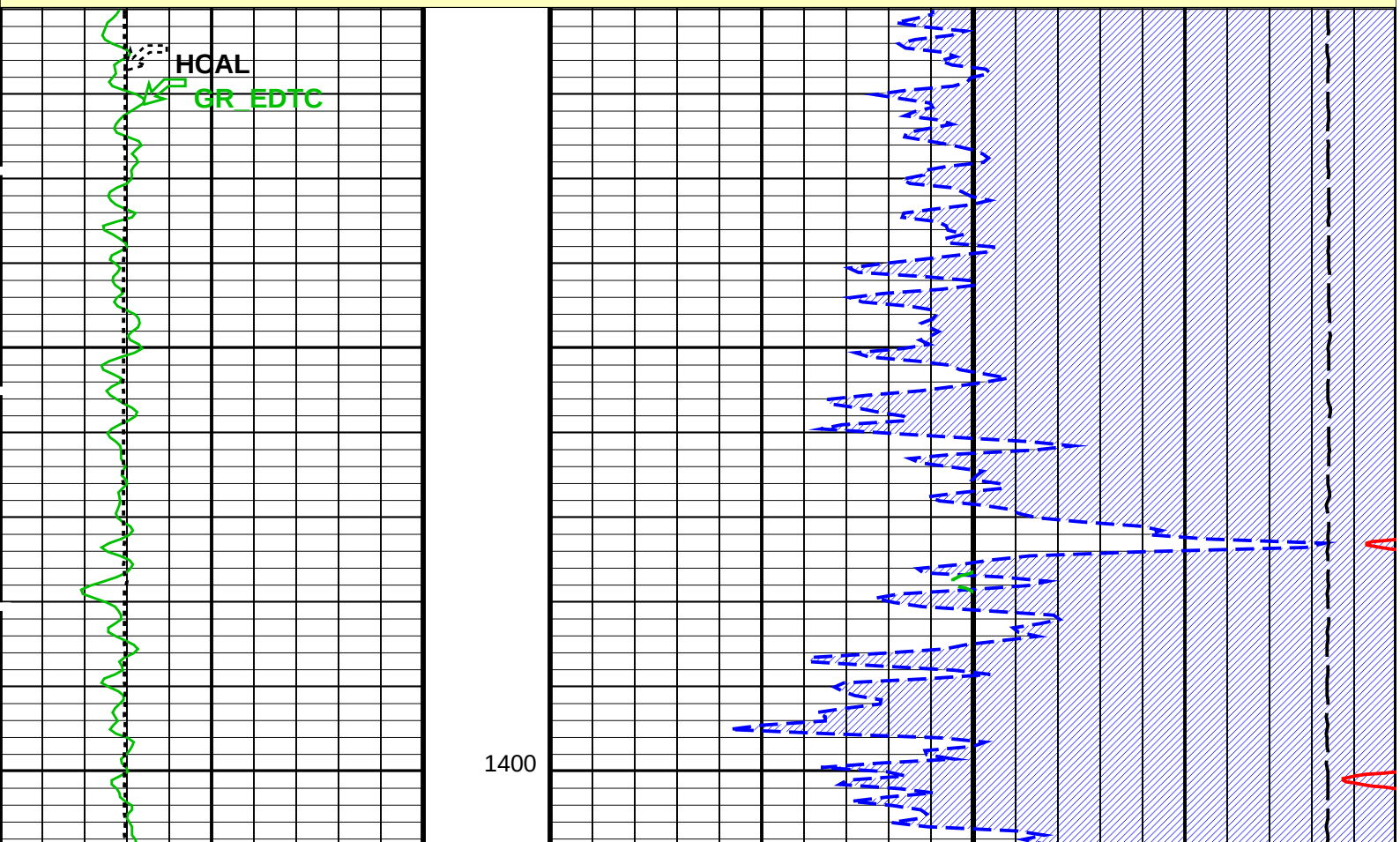
Gas Effect

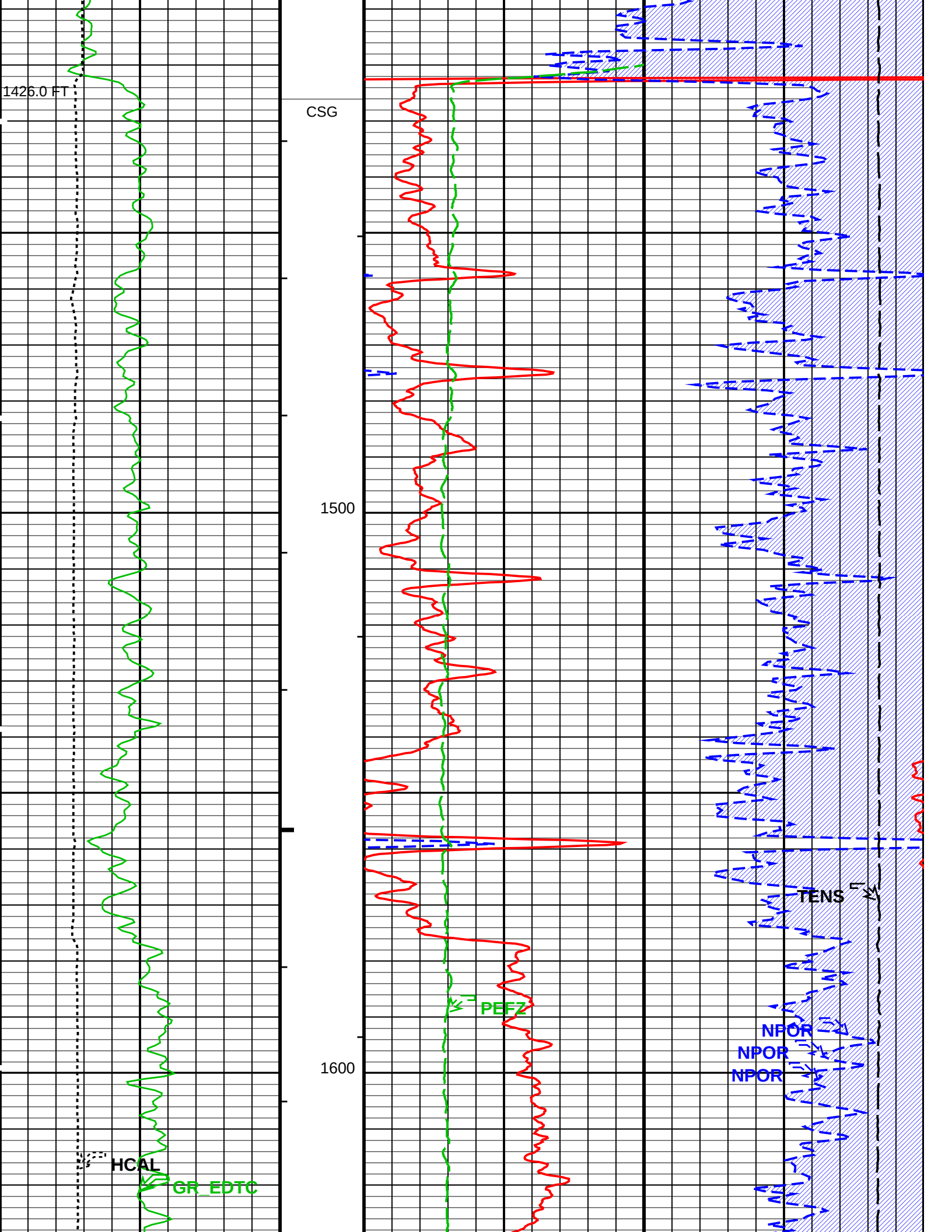
Stuck Stretch (STIT)	Std. Res. Formation Pe (PEFZ)	Tension (TENS)
0 (F) 50	0 (−−−− 10	10000 (LBF) 0

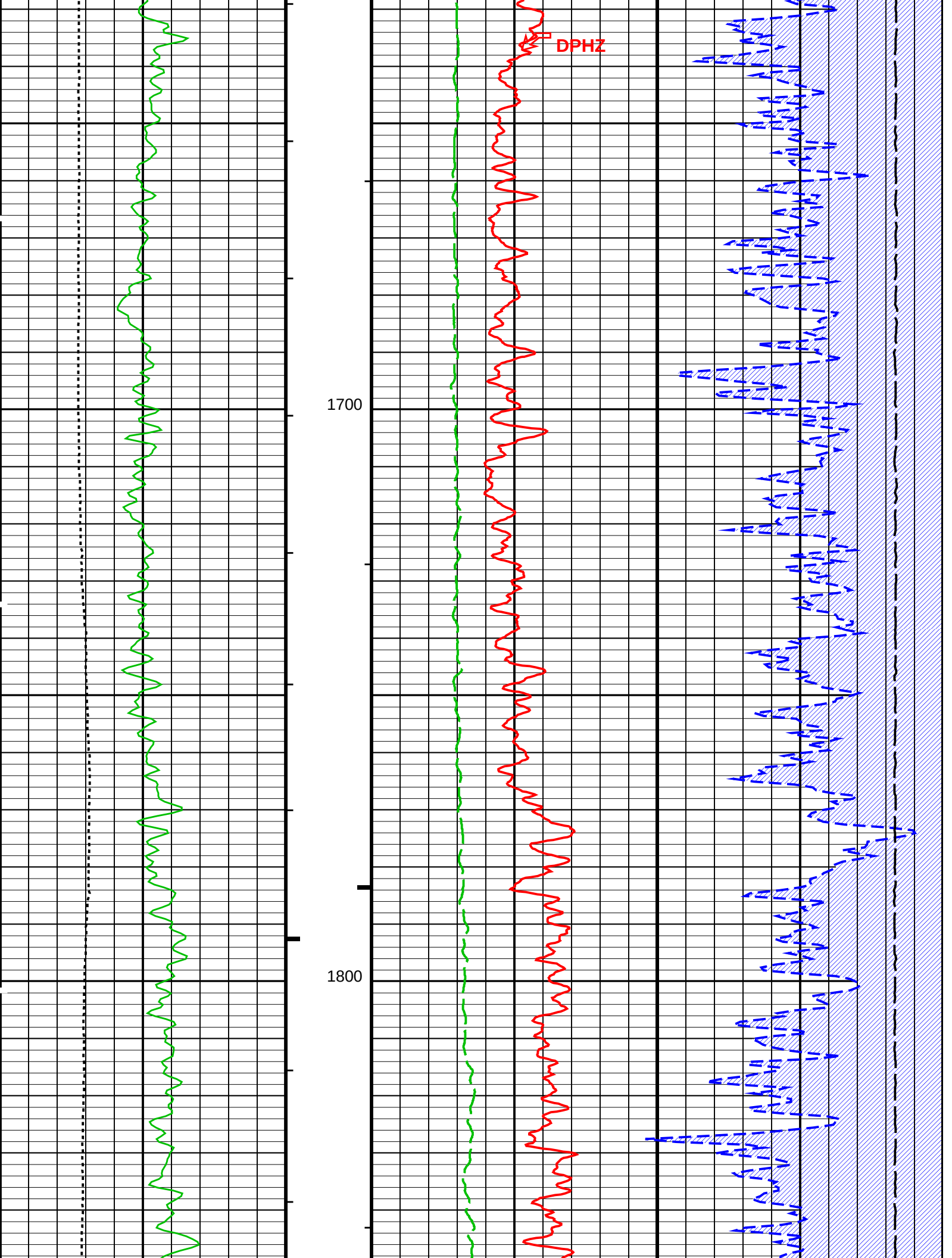
Caliper (HCAL)	Tool/Tot. Drag	Alpha Processed Neutron Porosity (NPOR)
6 (IN) 16		0.3 (V/V) −0.1

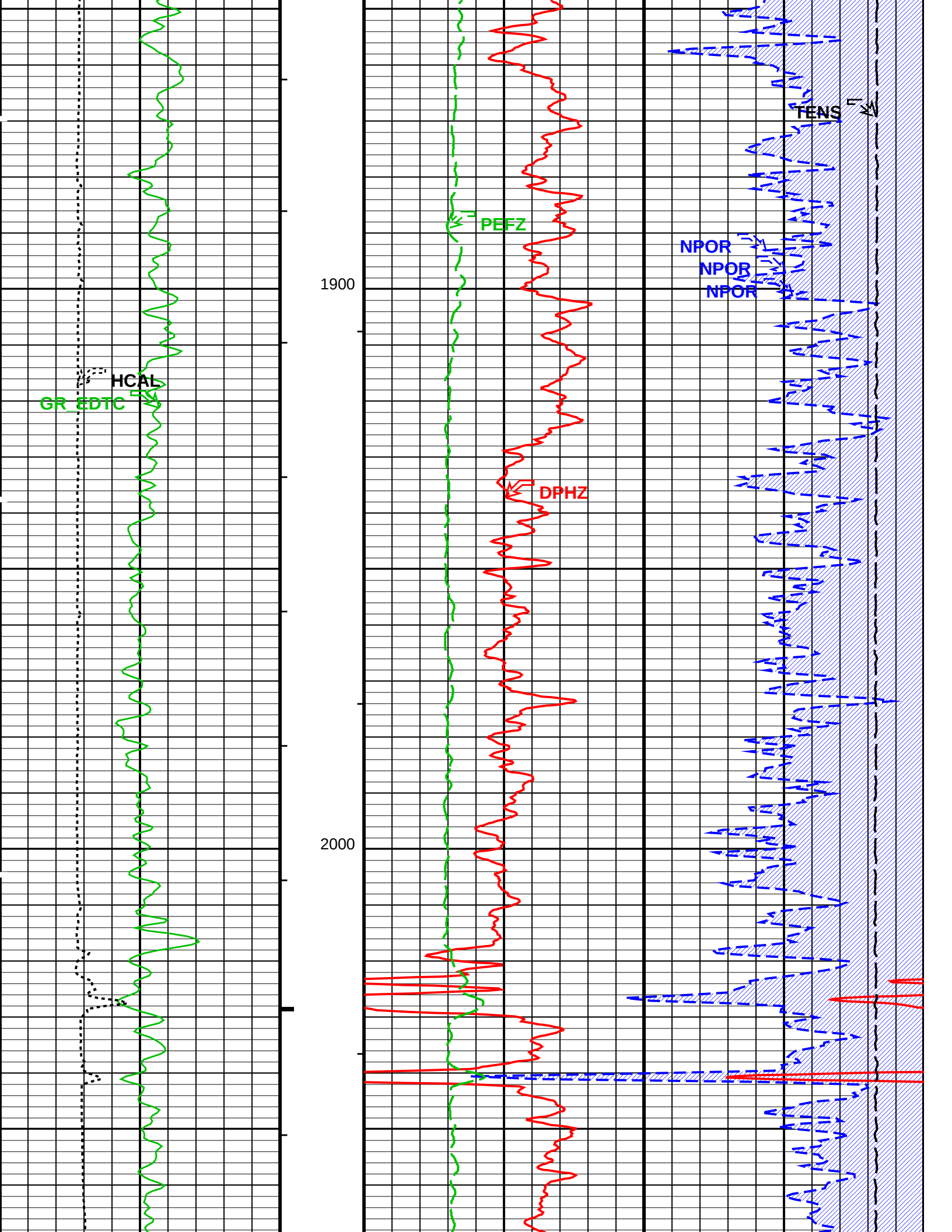
Gamma Ray (GR_EDTC)	Cable Drag	Std. Res. Density Porosity (DPHZ)
0 (GAPI) 200		0.3 (V/V) −0.1

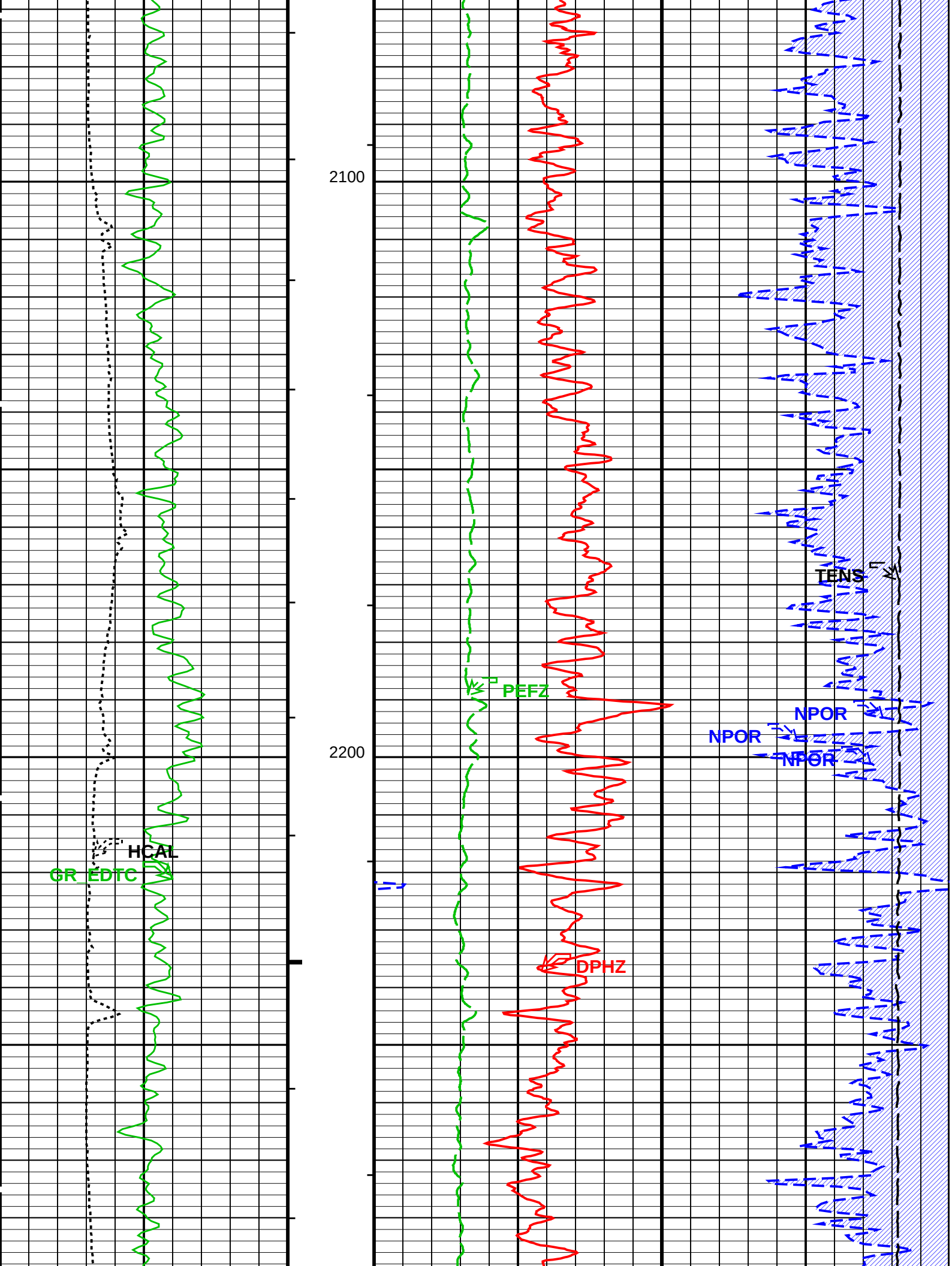
MAIN PASS: * PLATFORM EXPRESS − NUCLEAR POROSITY ***

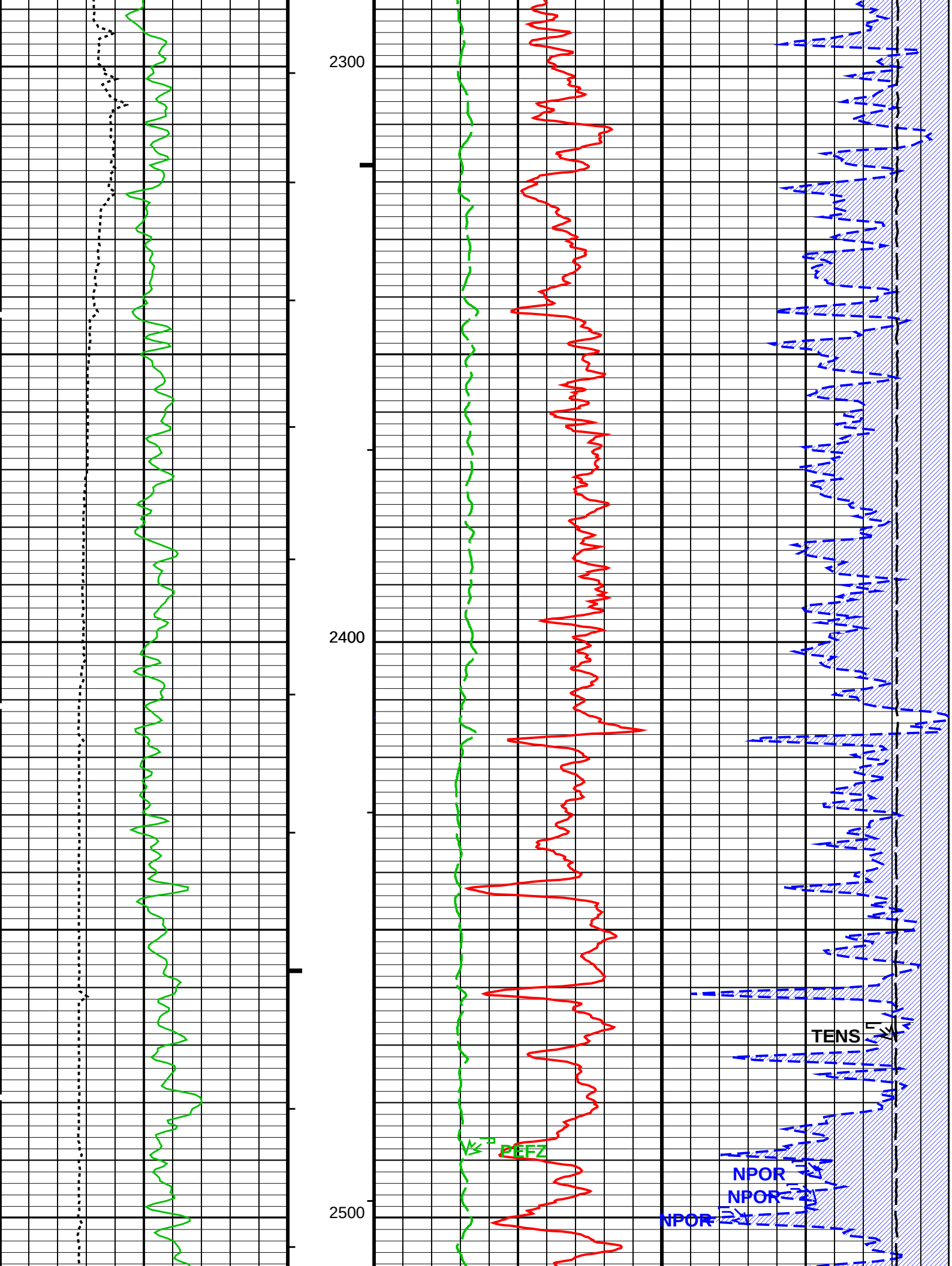


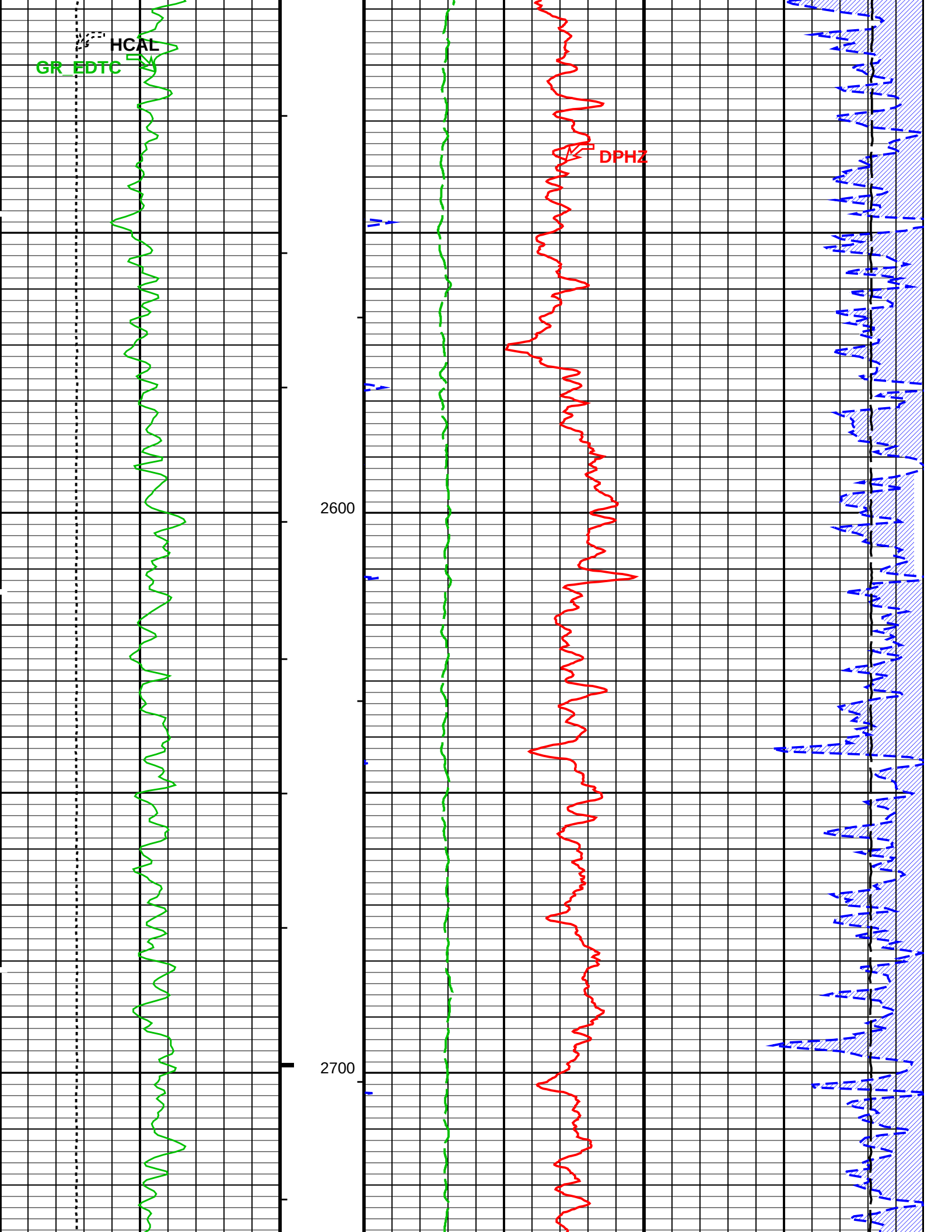

1426.0 FT
CSG
1500
1600
HCAL
GR_EDTC
PEFZ
TENS
NPOR
NPOR
NPOR

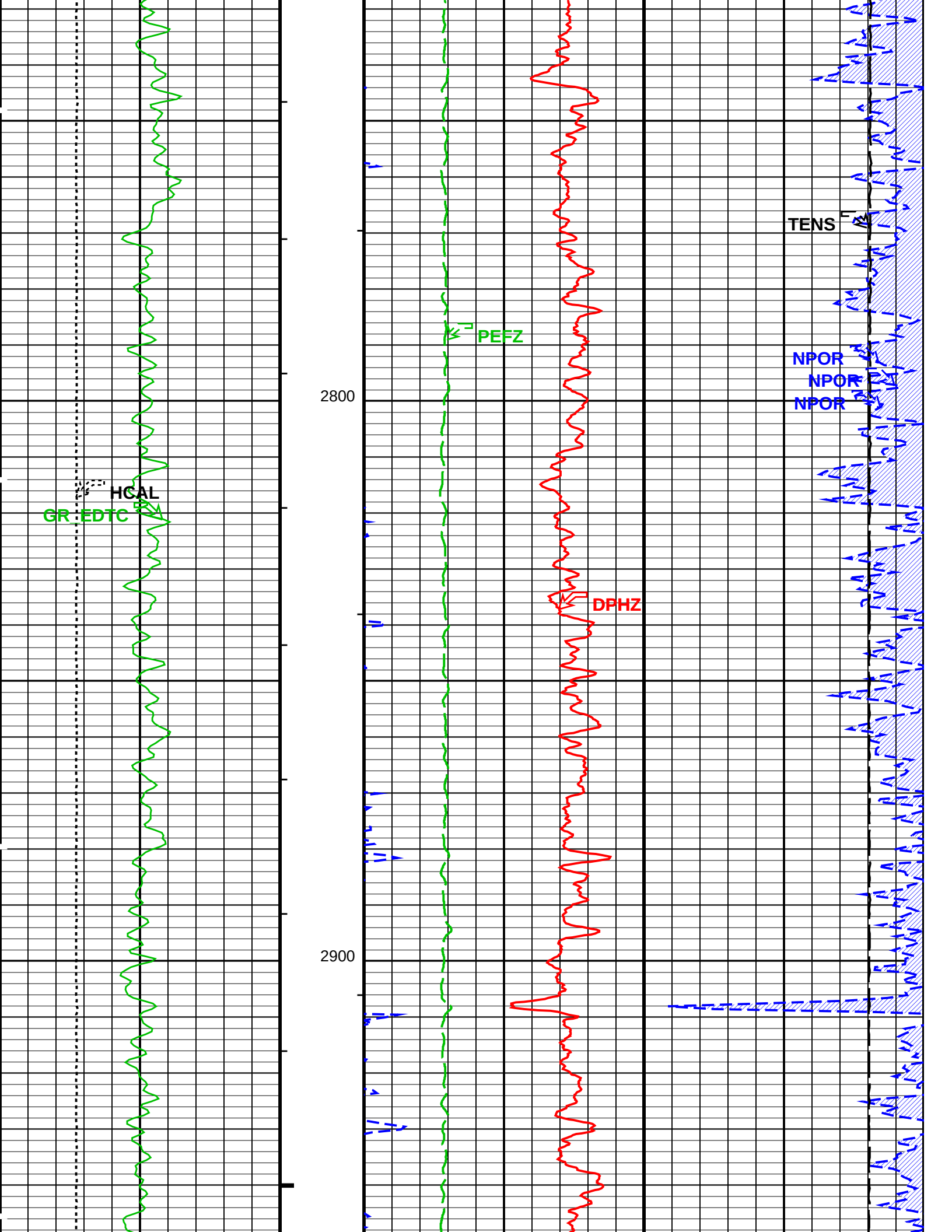

DPHZ
1700
1800

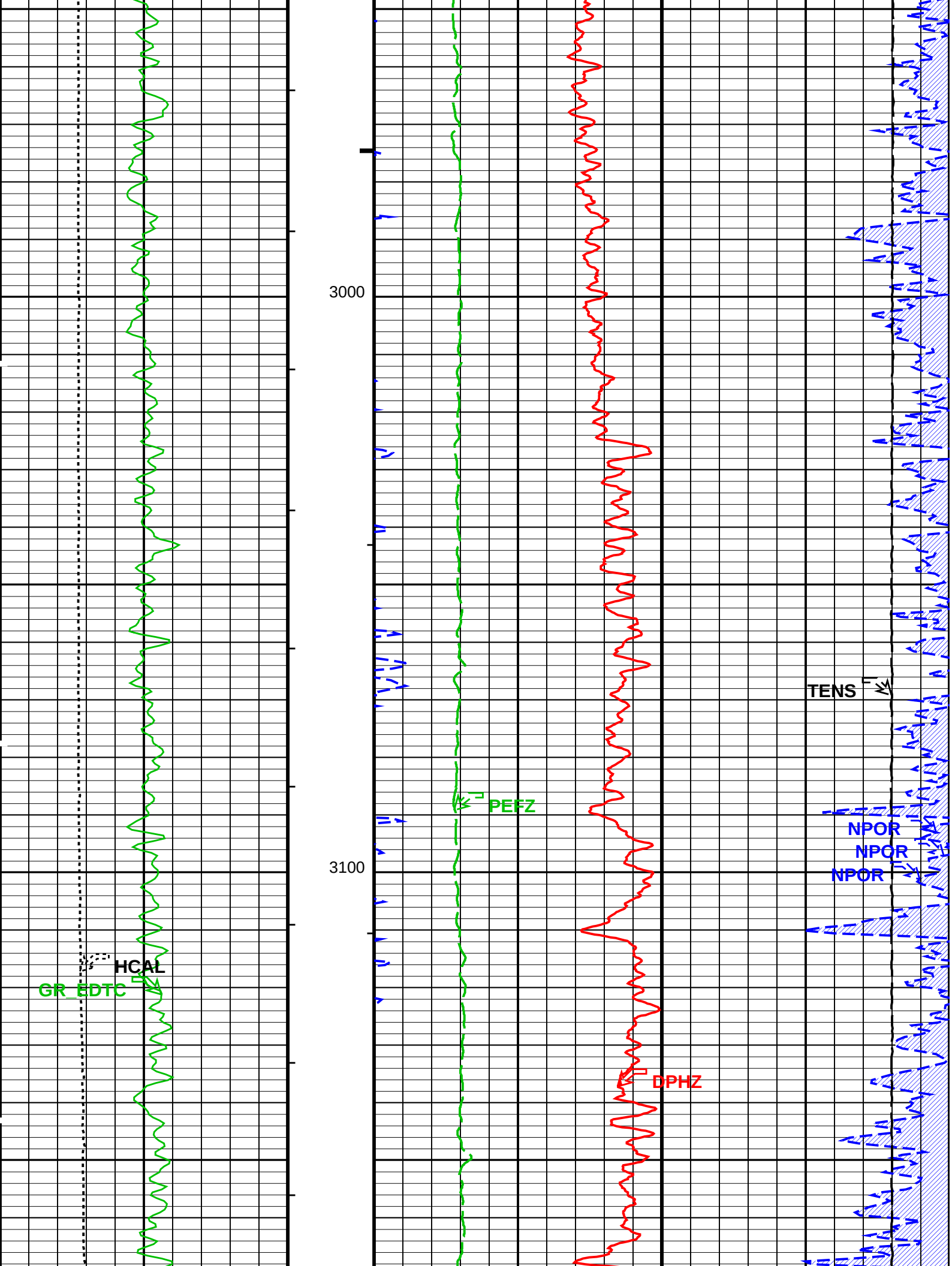

HCAL
GR_EDTC
PEFZ
DPHZ
NPOR
NPOR
NPOR
TENS
1900
2000

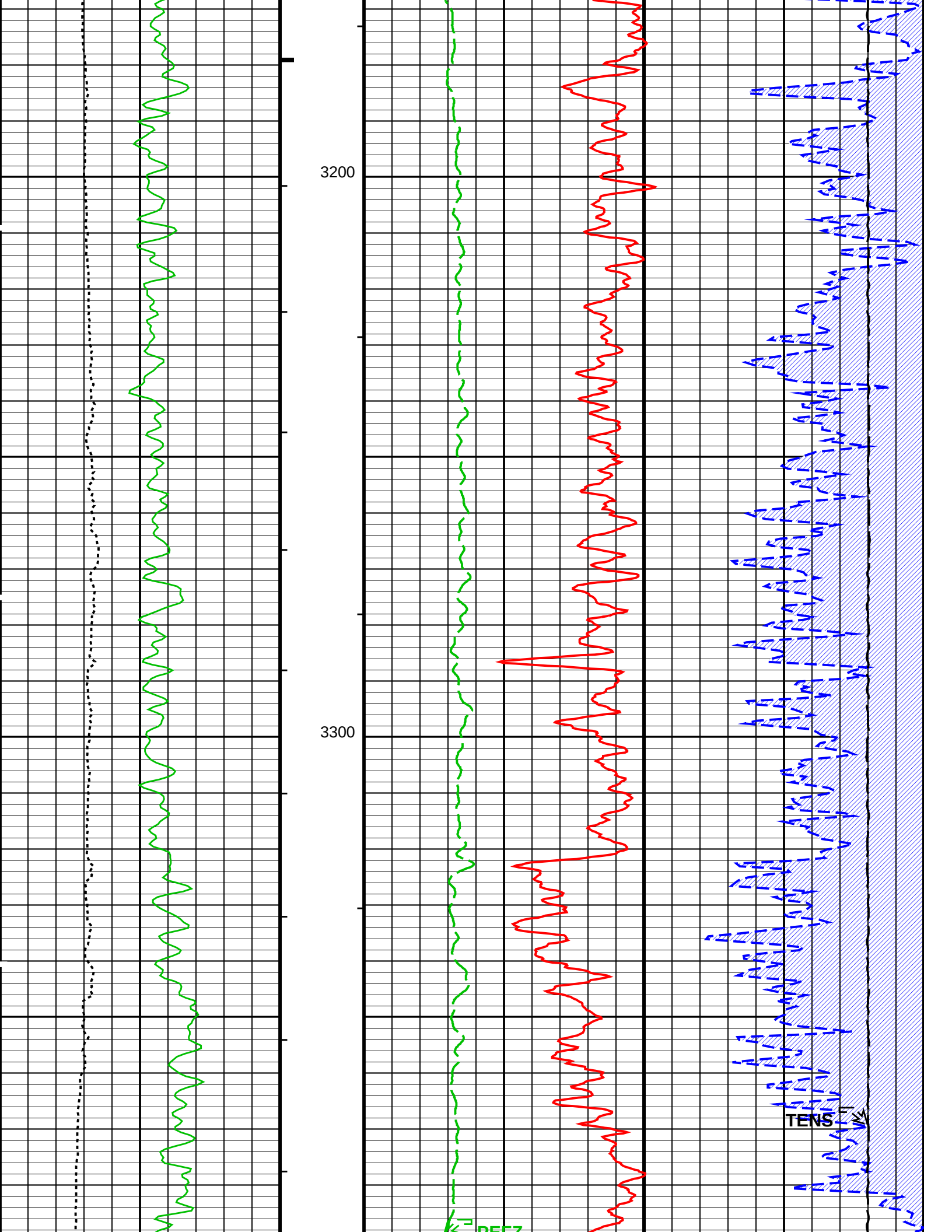

2100
2200
HCAL
GR_EDTC
PEFZ
DPHZ
TENS
NPOR
NPOR
NPOR

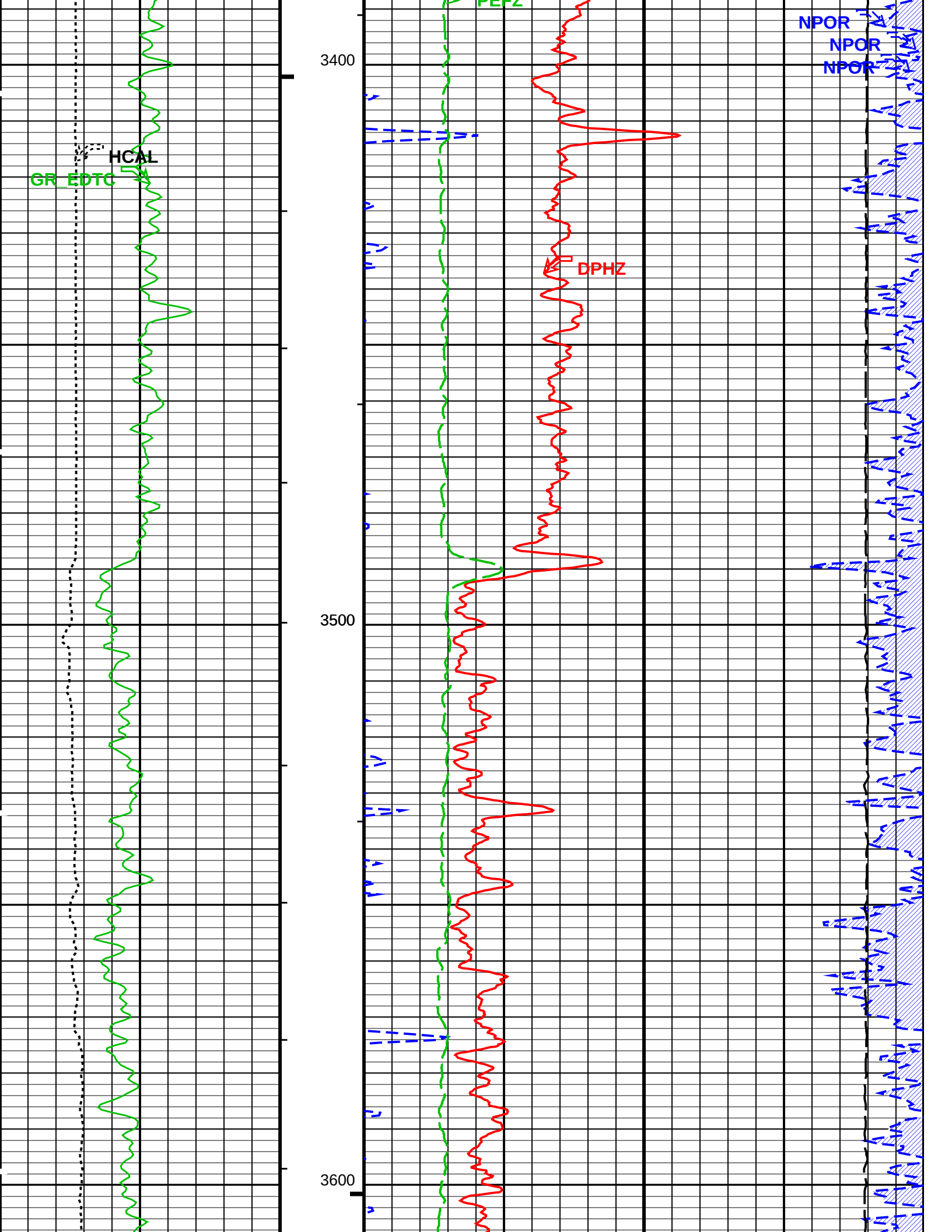

2300
2400
2500
TENS
PEFZ
NPOR
NPOR
NPOR

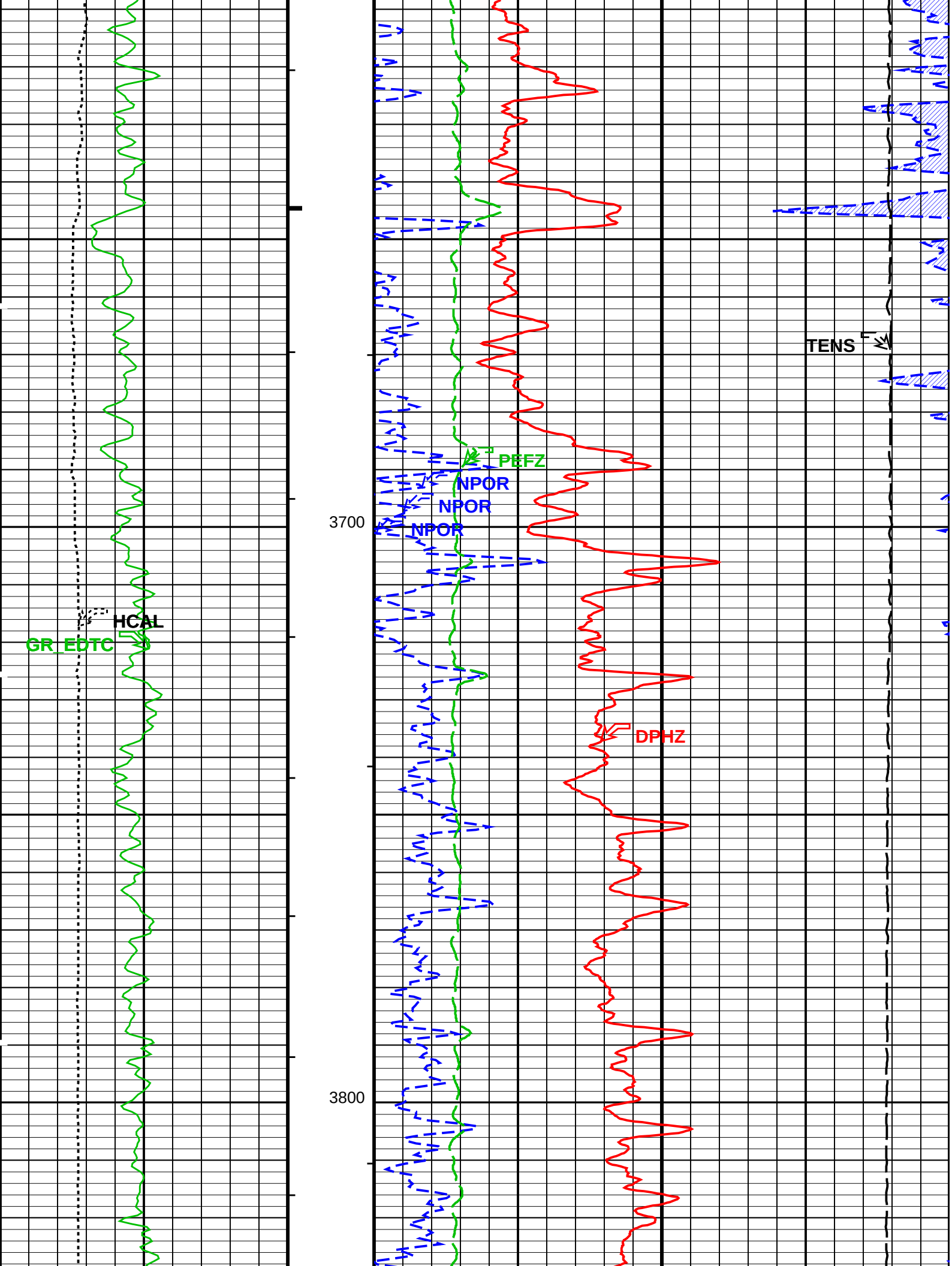

HCAL
GR_EDTC
DPHZ
2600
2700

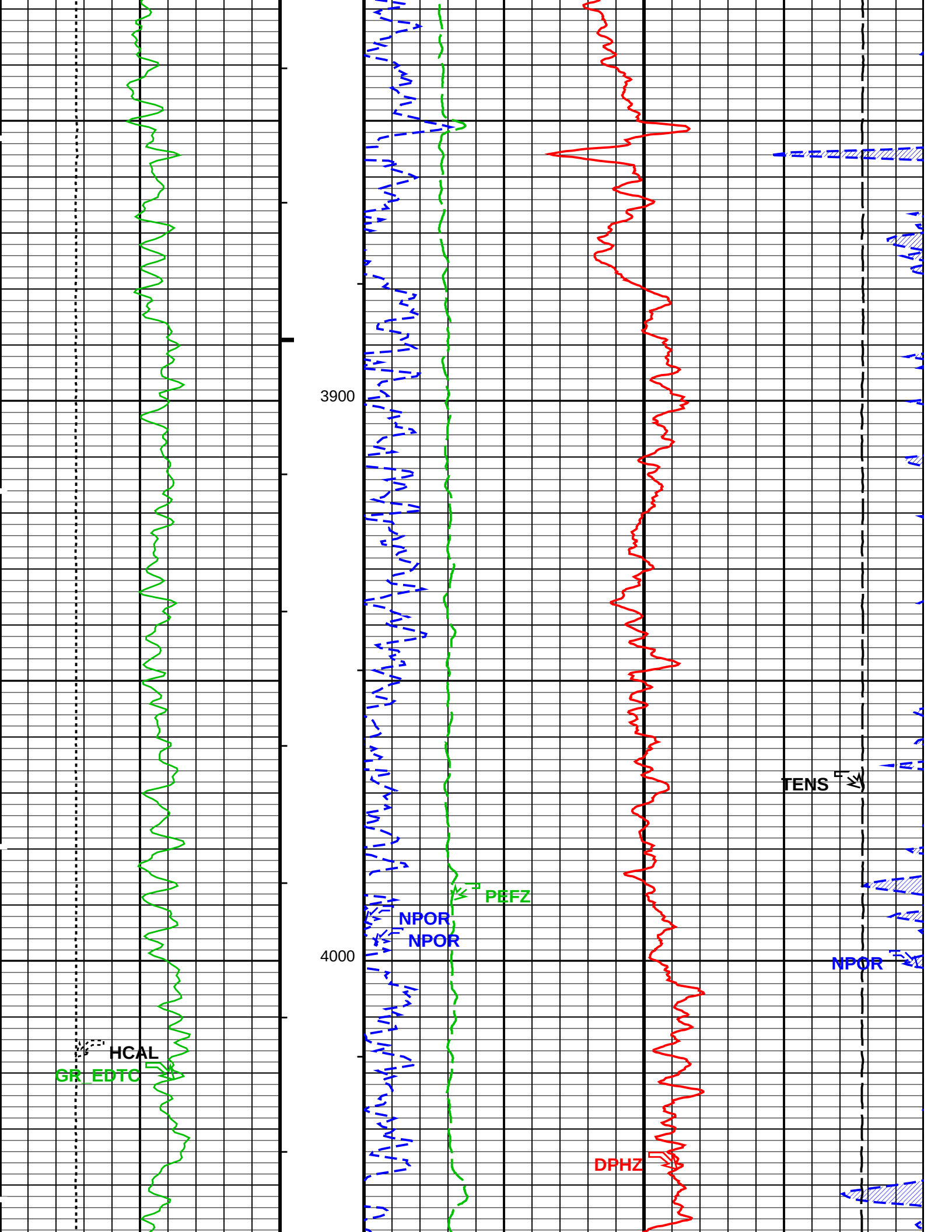

HCAL
GR_EDTC
PEFZ
DPHZ
TENS
NPOR
NPOR
NPOR
2800
2900

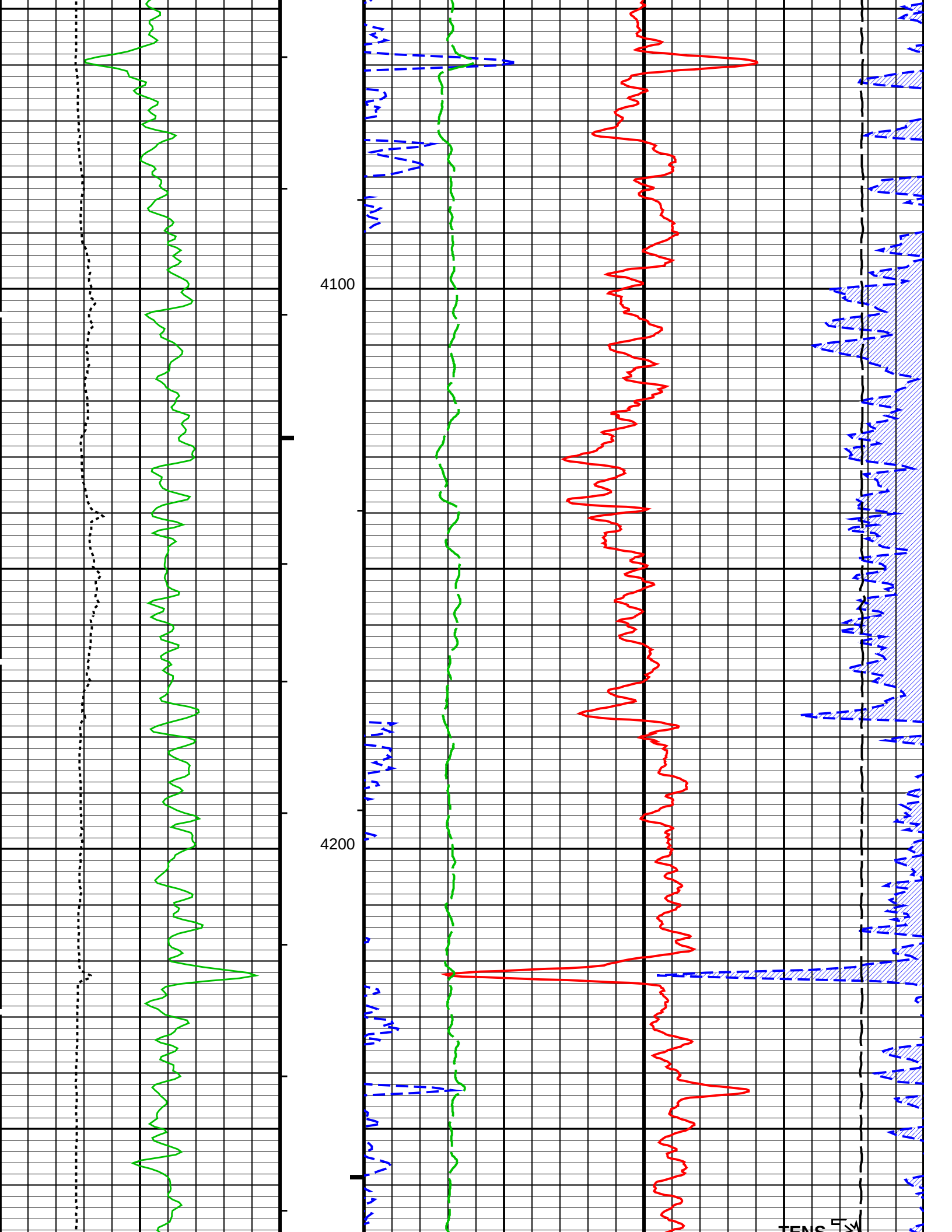

3000
3100
HCAL
GR_EDTC
PEFZ
DPHZ
TENS
NPOR
NPOR
NPOR

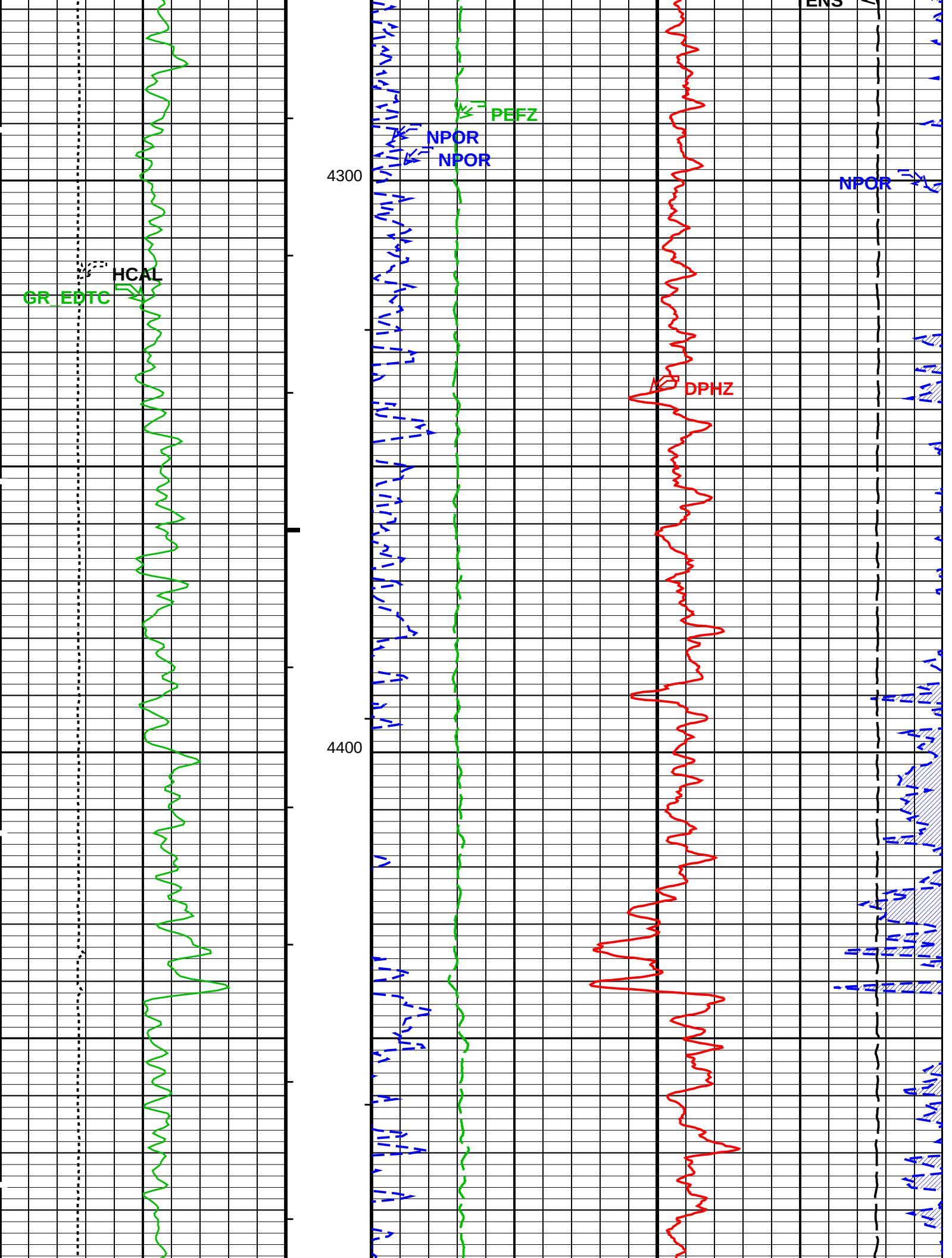

3200
3300
TENS

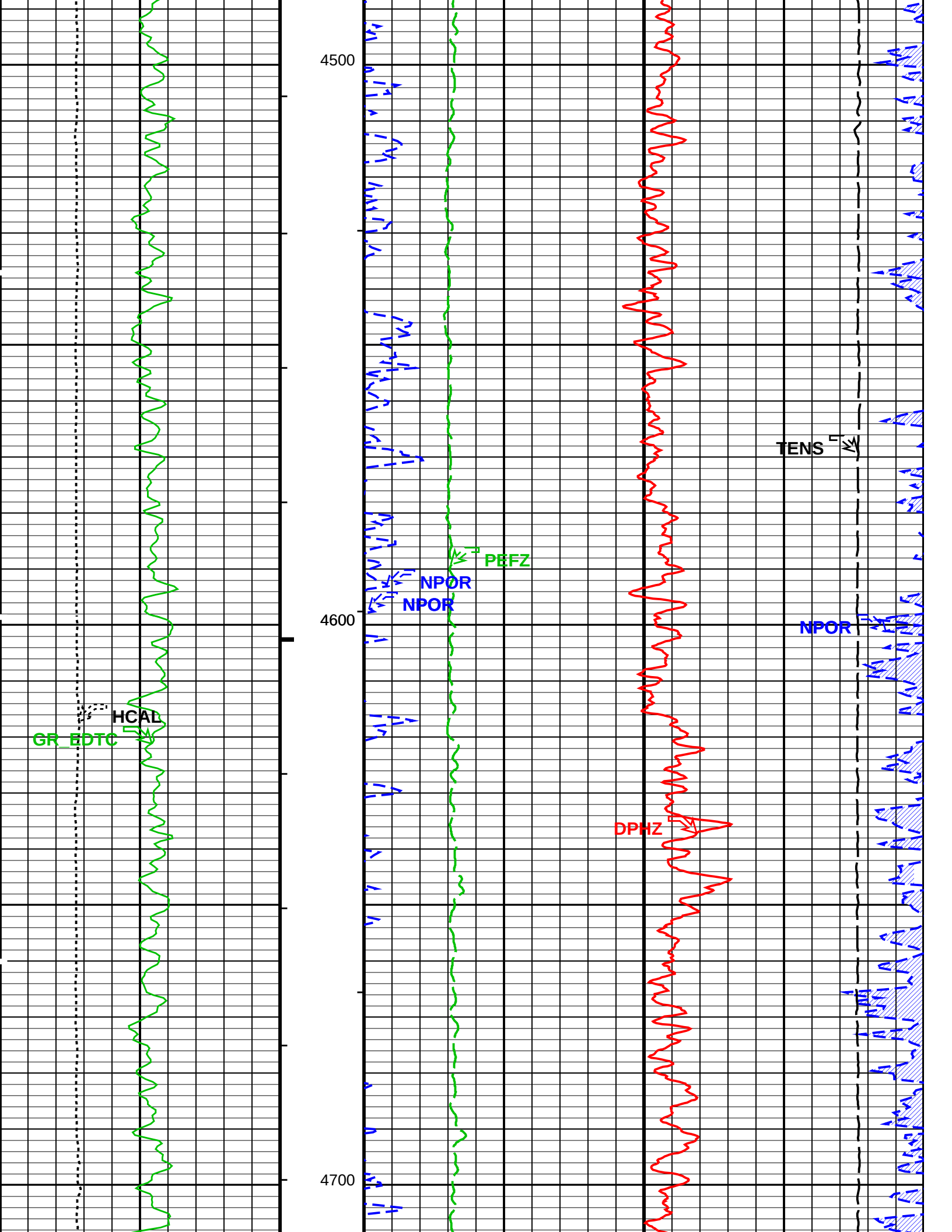

PEFZ
NPOR
NPOR
NPOR
HCAL
GR_EDTC
DPHZ
3400
3500
3600

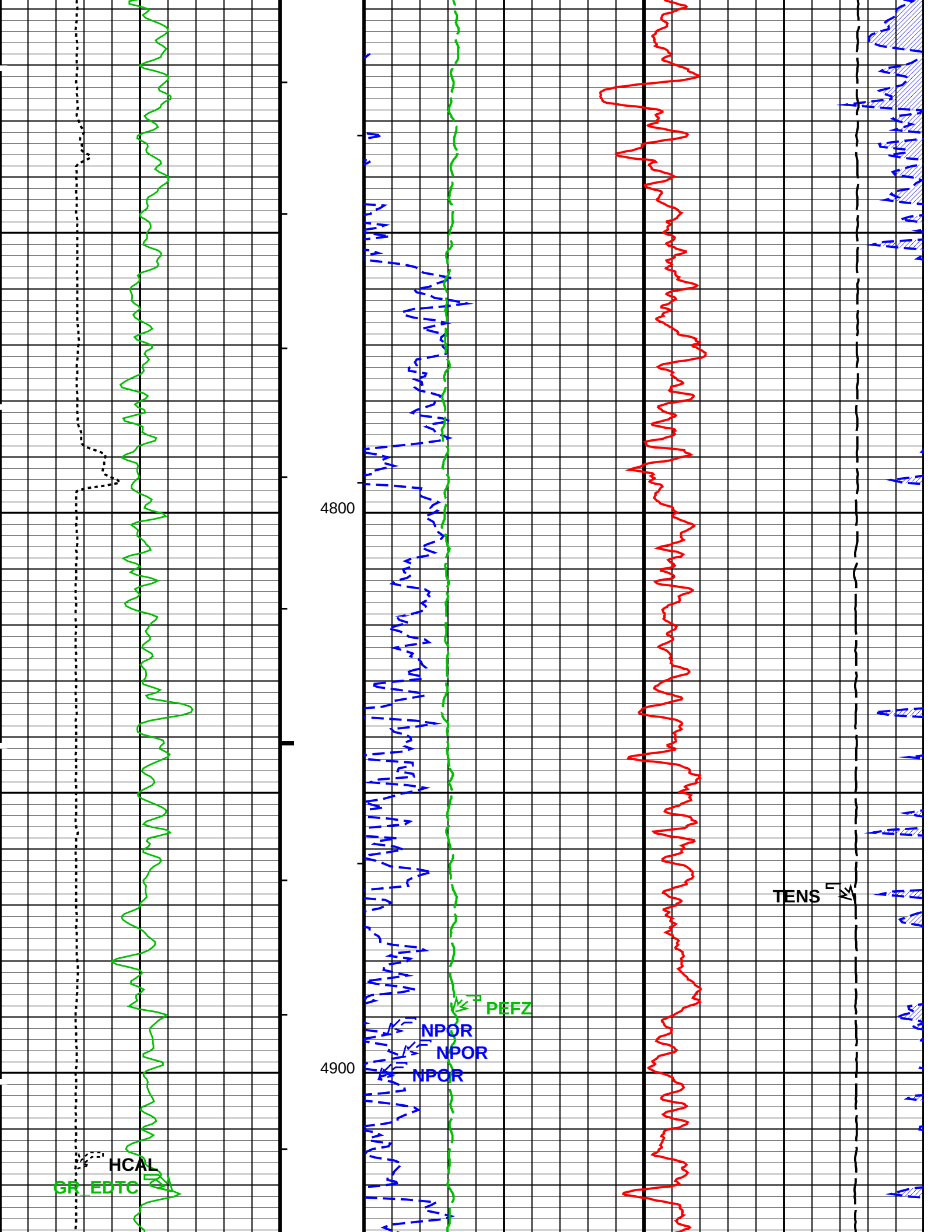

TENS
PEFZ
NPOR
NPOR
NPOR
3700
HCAL
GR_EDTC
DPHZ
3800

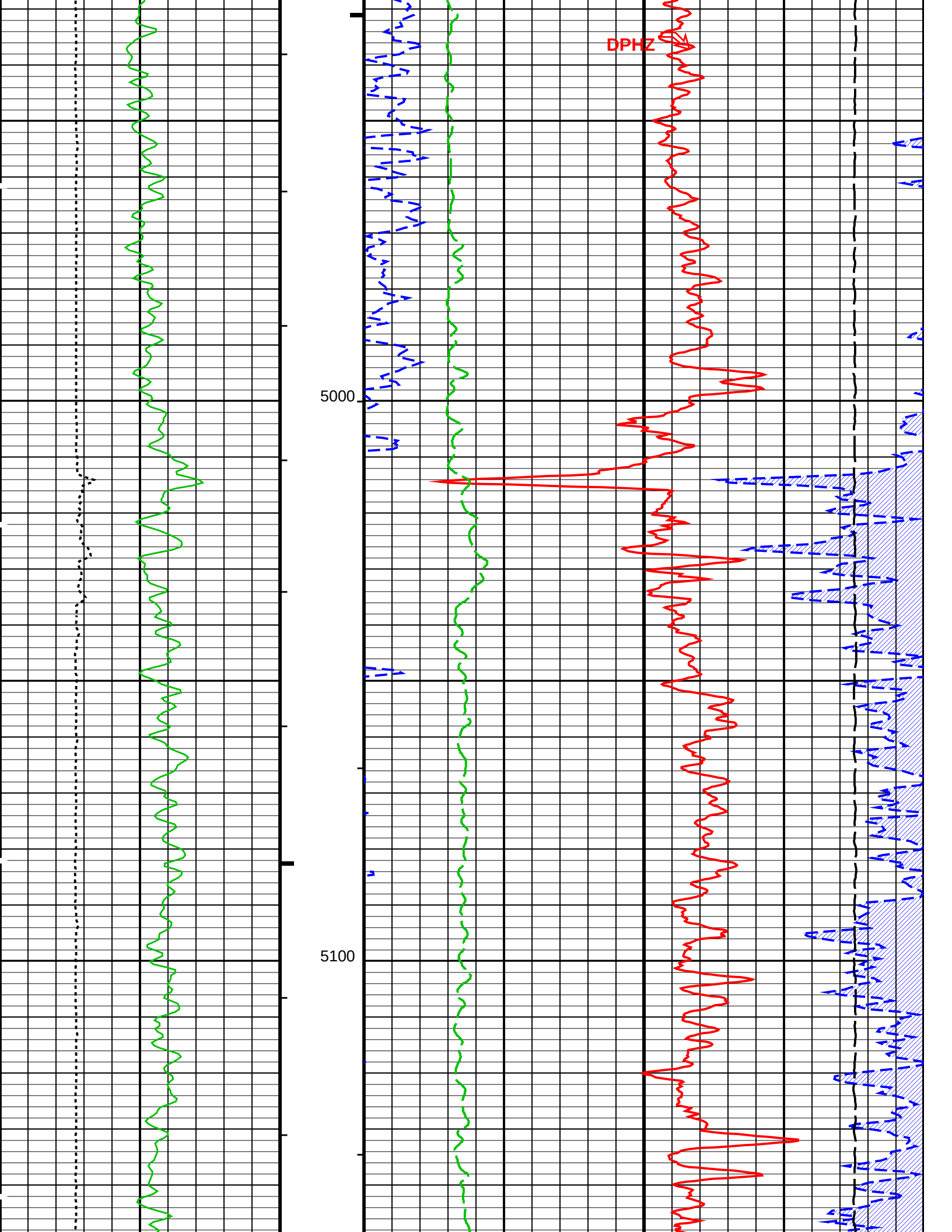

3900
4000
HCAL
GR
EDTC
PEFZ
NPOR
NPOR
TENS
NPOR
DPHZ

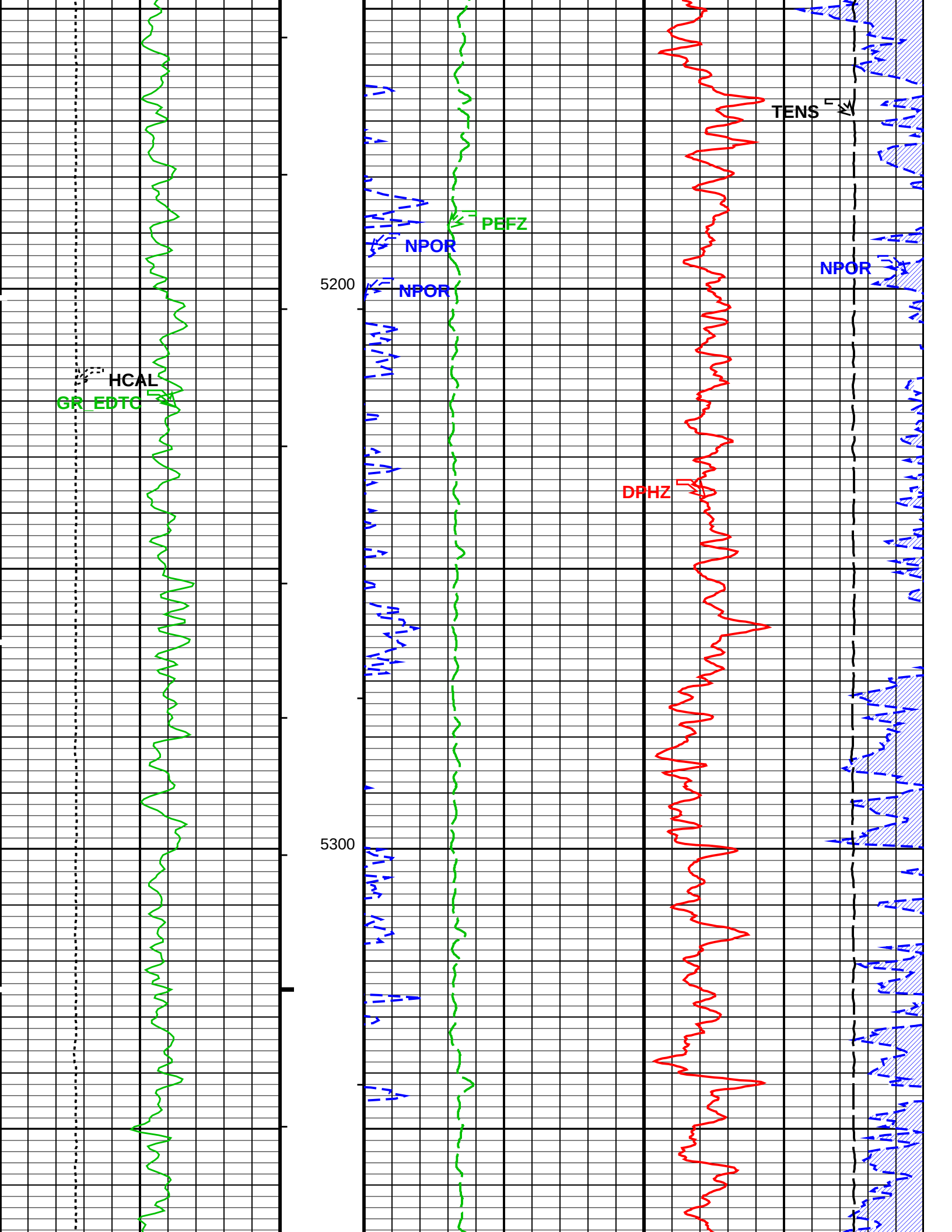

4100
4200
TENS

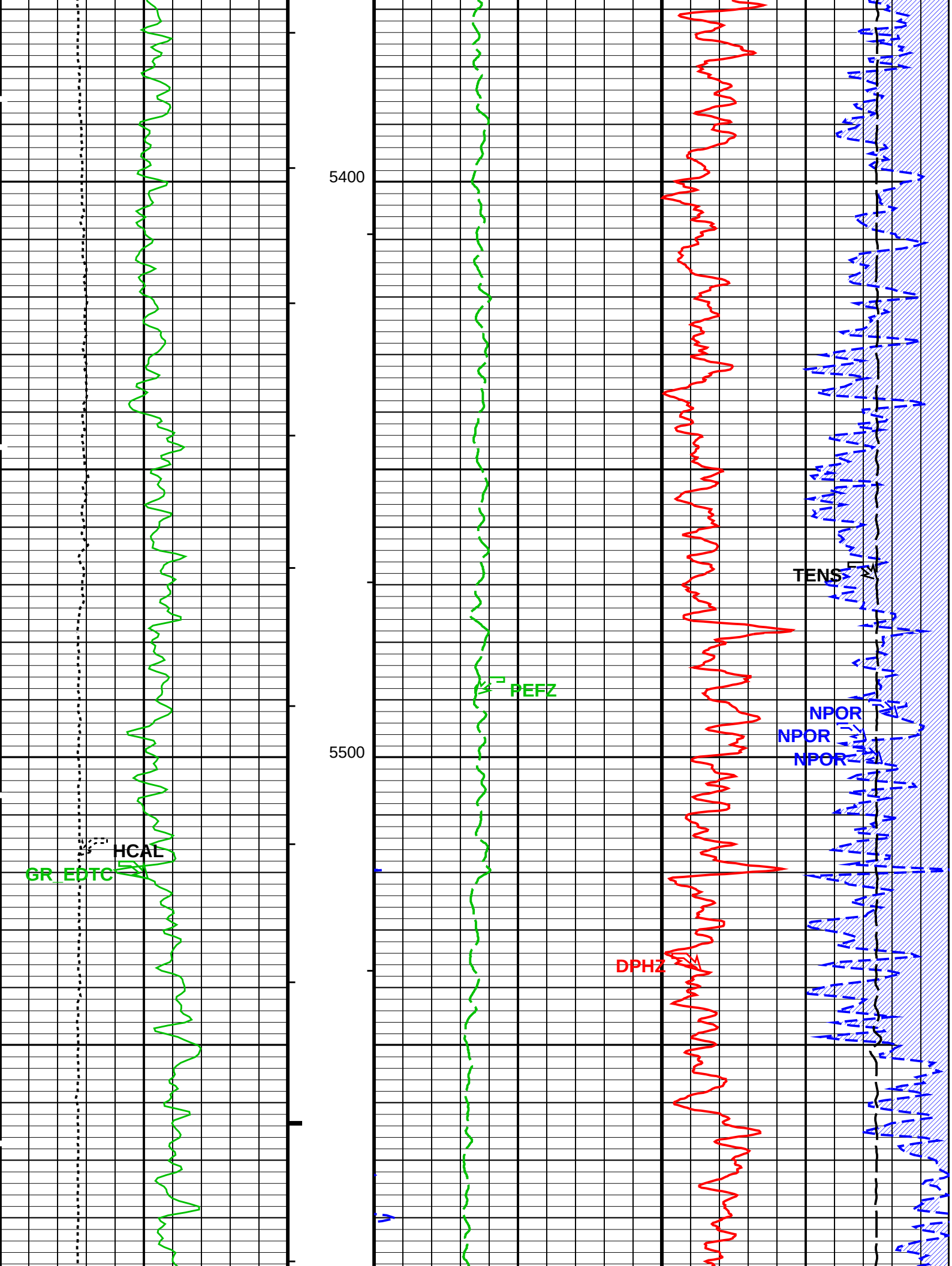

HCAL
GR_EDTC
PEFZ
NPOR
NPOR
4300
NPOR
DPHZ
4400

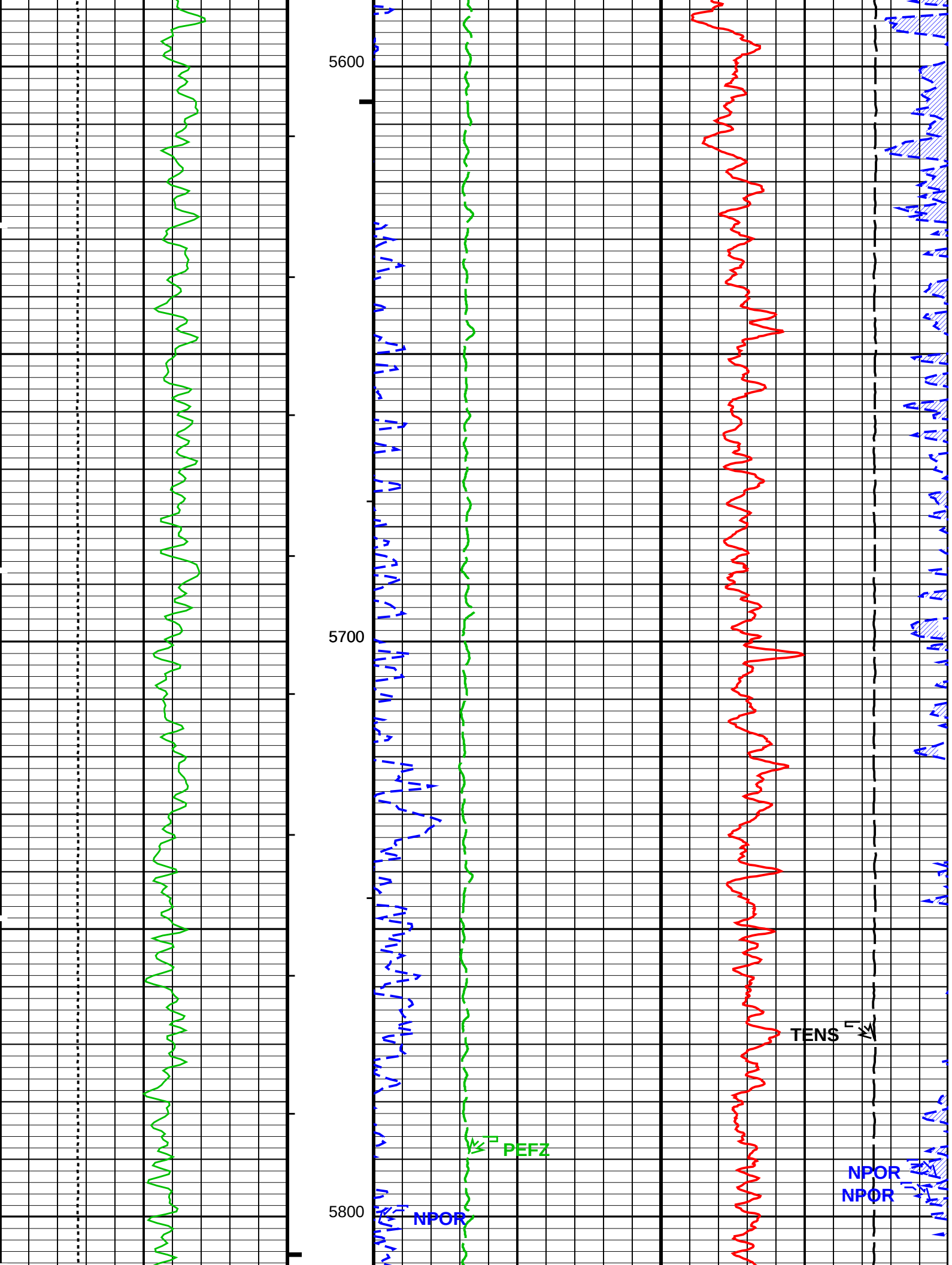

4500
4600
4700
HCAL
GR_EDTC
PEFZ
NPOR
NPOR
TENS
NPOR
DPHZ

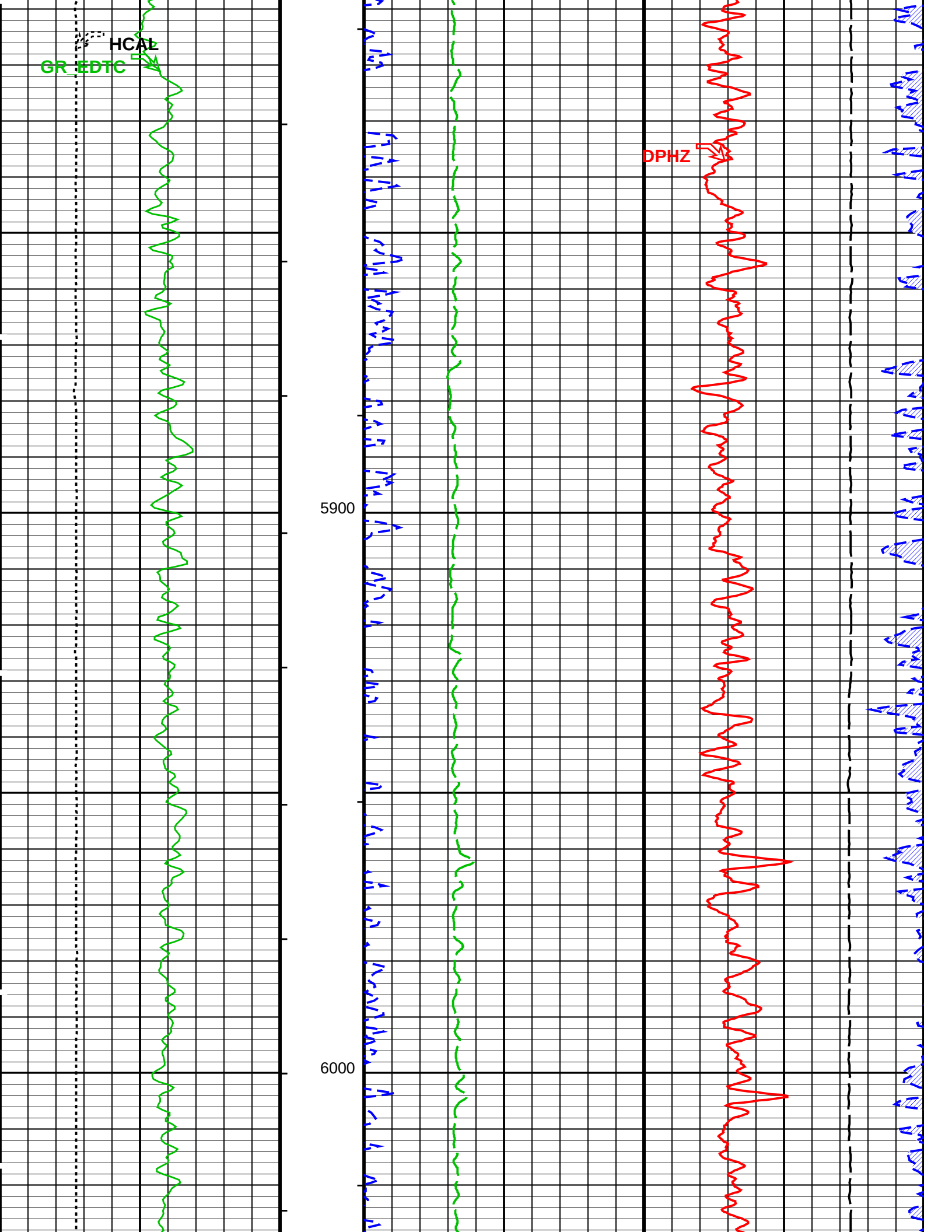

4800
4900
HCAL
GR_EDTC
PEFZ
NPOR
NPOR
NPOR
TENS

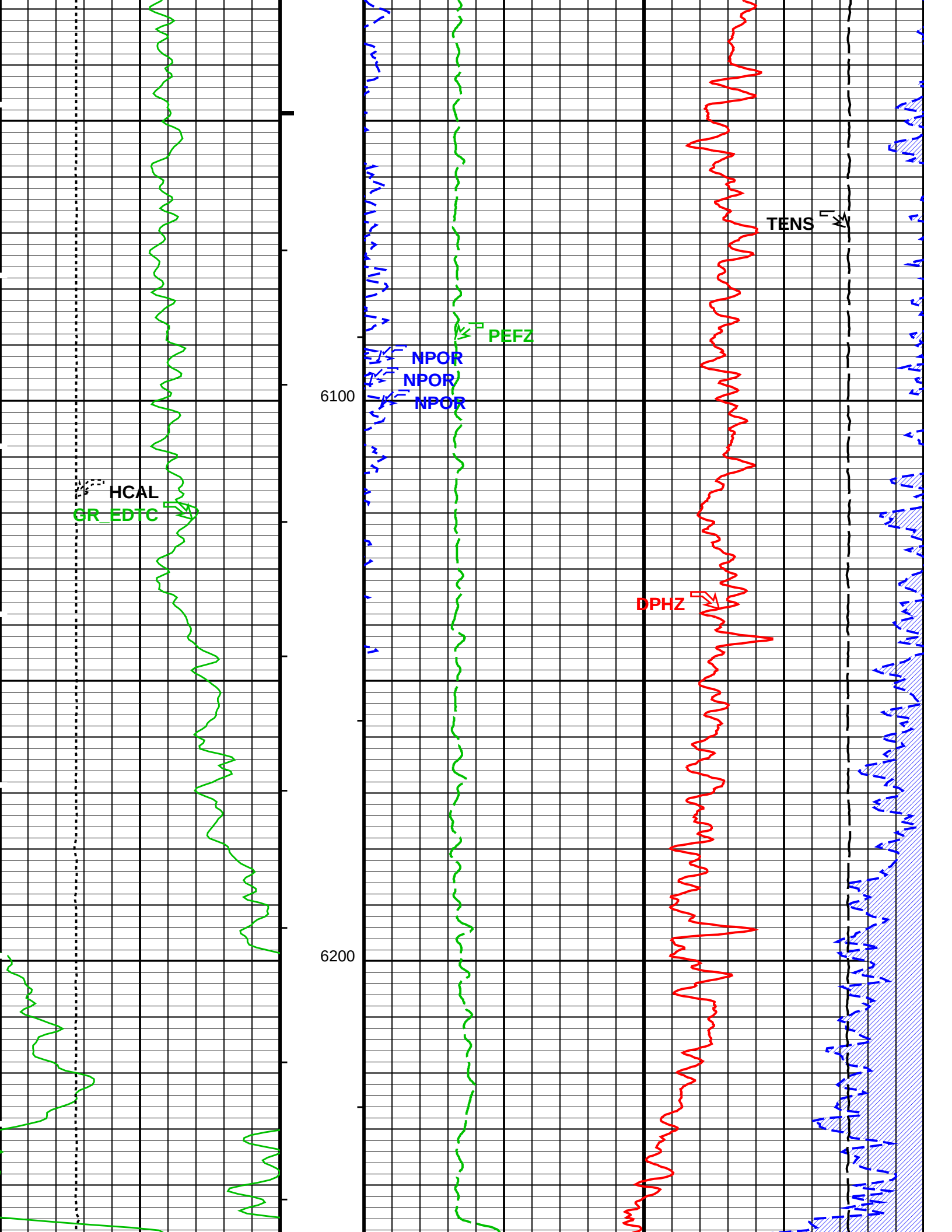

DPHZ
5000
5100

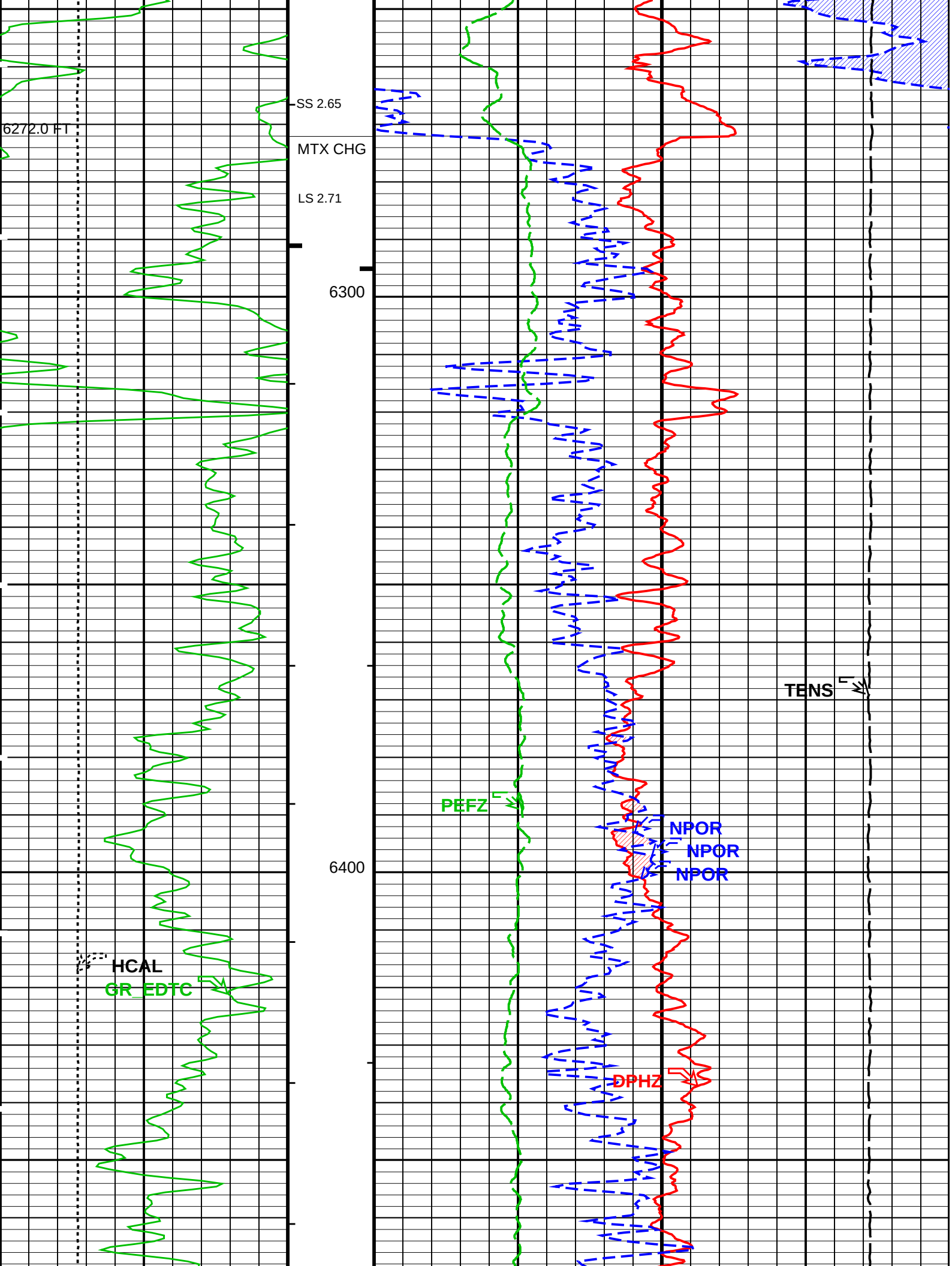

HCAL
GR_EDTC
PEFZ
NPOR
NPOR
5200
TENS
NPOR
DPHZ
5300

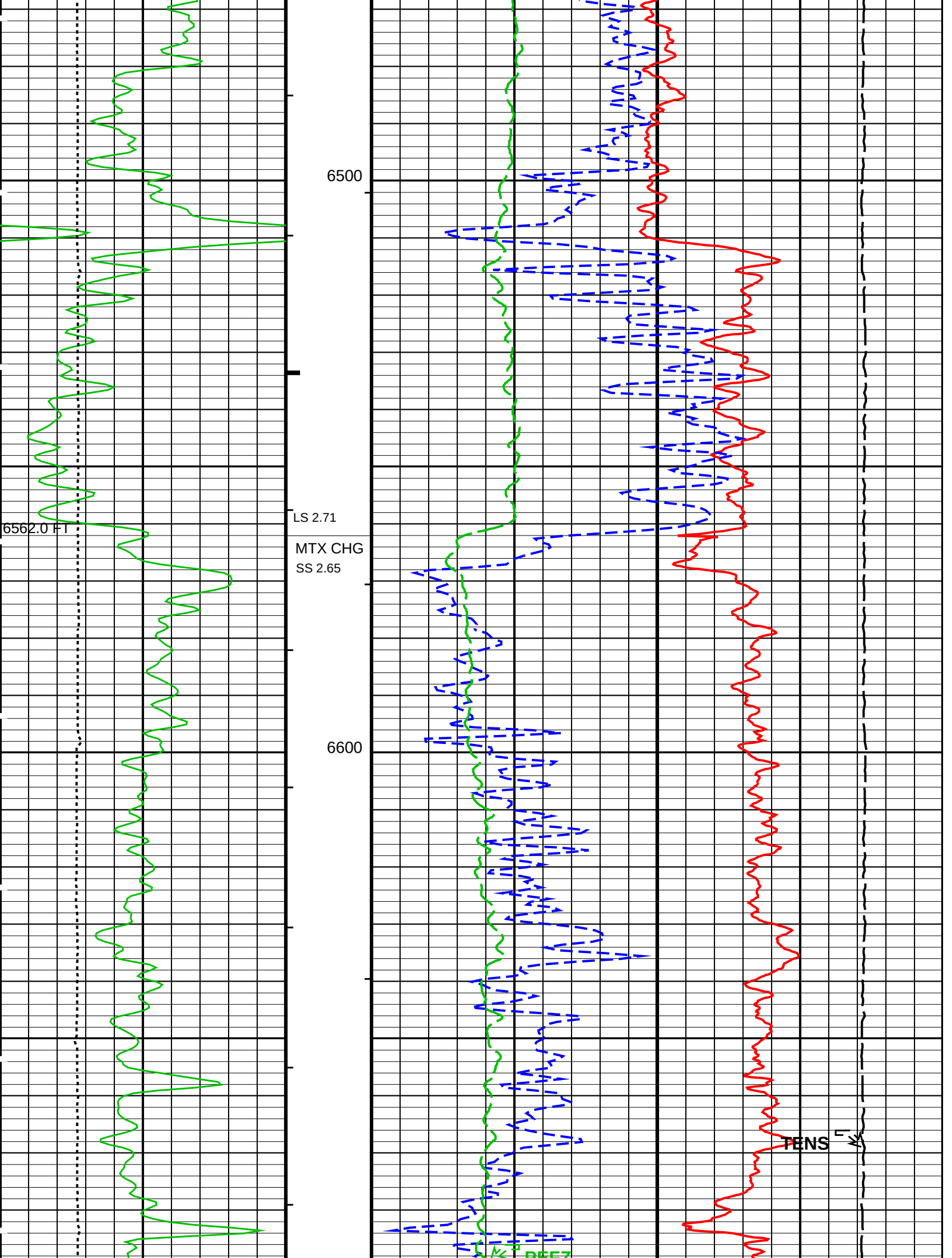

5400
5500
HCAL
GR_EDTC
PEFZ
TENS
NPOR
NPOR
NPOR
DPHZ

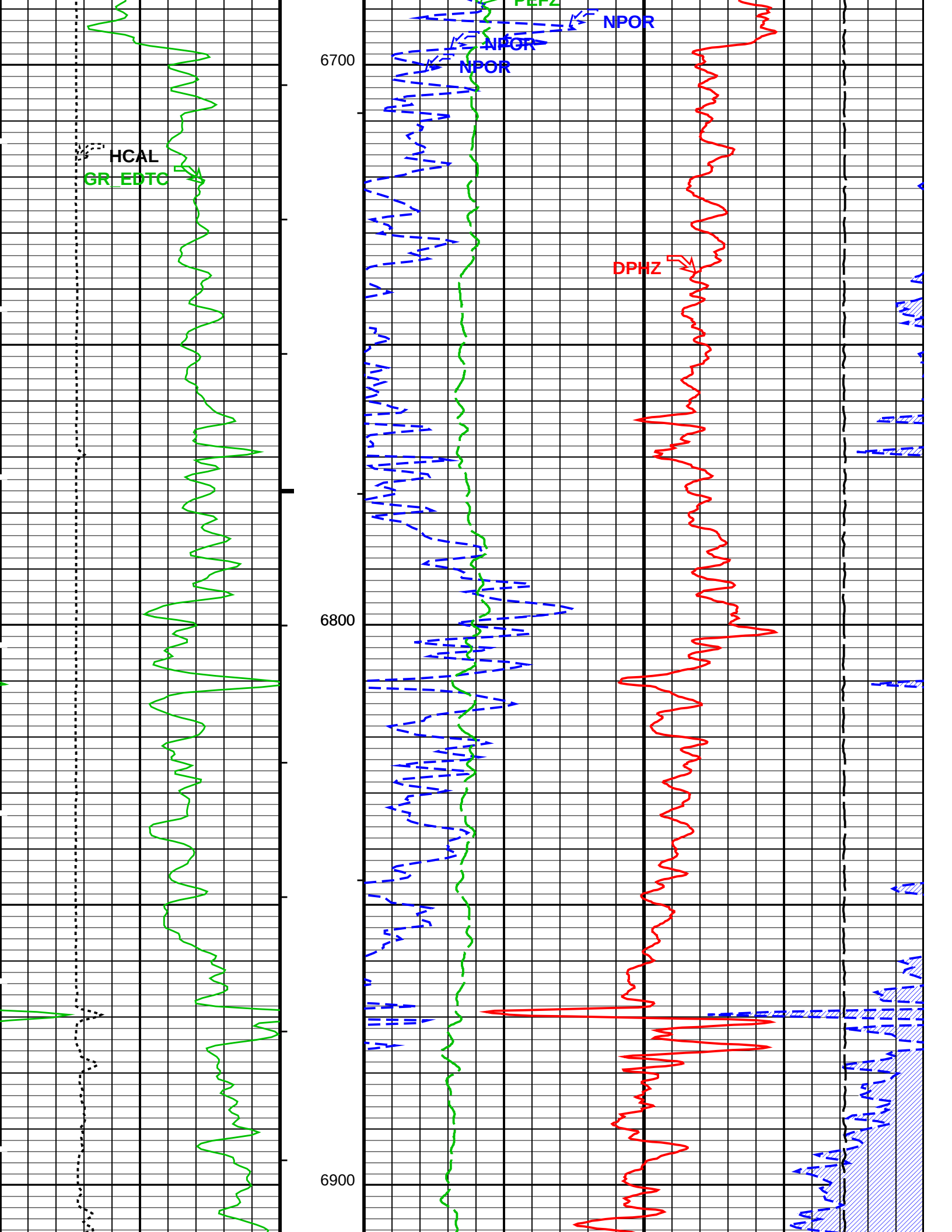

5600
5700
5800
TENS
PEFZ
NPOR
NPOR
NPOR

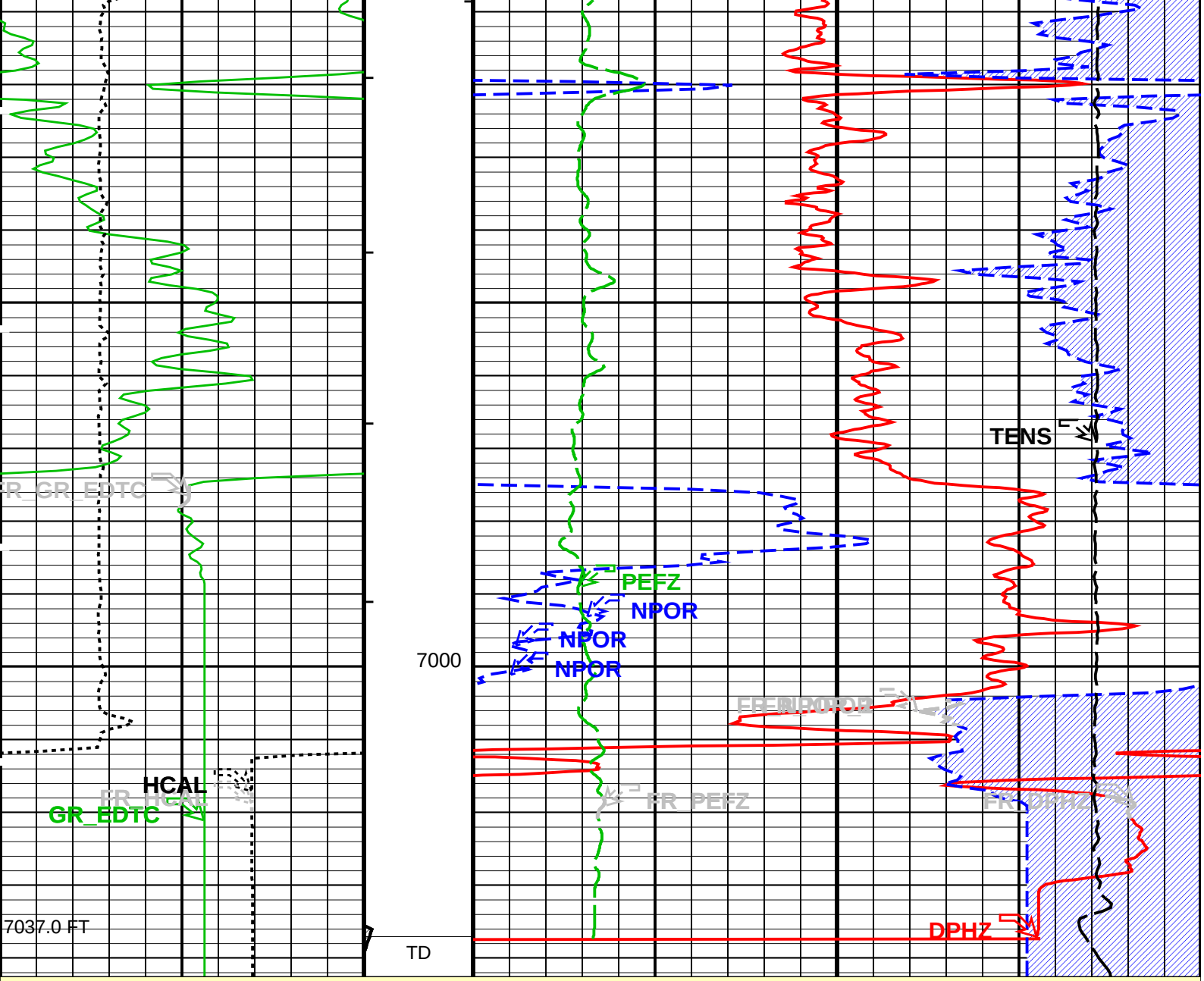

HCAL
GR_EDTC
DPHZ
5900
6000


HCAL
GR_EDTC
PEFZ
NPOR
NPOR
NPOR
TENS
DPHZ
6100
6200


6272.0 FT
SS 2.65
MTX CHG
LS 2.71
6300
6400
HCAL
GR_EDTC
PEFZ
NPOR
NPOR
NPOR
TENS
DPHZ


6500
6562.0 FT
LS 2.71
MTX CHG
SS 2.65
6600
TENS


PEFZ
NPOR
NPOR
NPOR
HCAL
GR_EDTC
DPHZ
6700
6800
6900



MAIN PASS: * PLATFORM EXPRESS – NUCLEAR POROSITY *****

Gamma Ray (GR_EDTC) 0 (GAPI) 200	Cable Drag	Std. Res. Density Porosity (DPHZ) 0.3 (V/V) −0.1
Caliper (HCAL) 6 (IN) 16	Tool/Tot. Drag	Alpha Processed Neutron Porosity (NPOR) 0.3 (V/V) −0.1
	Stuck Stretch (STIT) 0 (F) 50	Std. Res. Formation Pe (PEFZ) 0 (~~~~ 10 / Tension (TENS) 10000 (LBF) 0
		Gas Effect
		NPOR Backup

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 10 F3
- Integrated Hole Volume Major Pip Every 100 F3
- Integrated Cement Volume Minor Pip Every 10 F3
- Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HILTB−FTB: High resolution Integrated Logging Tool−DTS		
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal−like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.65	G/C3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	EDTC−B: Enhanced DTS Cartridge		
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	7	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	PERT: Preliminary Evaluation − Real Time		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth − Driller	7067.00	FT
TDL	Total Depth − Logger	7037.00	FT
	System and Miscellaneous		
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	−50000.00	PPM
CWEI	Casing Weight	36.00	LB/F
DO	Depth Offset for Playback	0.0	FT
MST	Mud Sample Temperature	193.75	DEGF
PP	Playback Processing	RECOMPUTE	

PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.0117	OHMM
TD	Total Depth	7037	FT

Format: PORO Vertical Scale: 5" per 100’ Graphics File Created: 22−Nov−2011 14:05

OP System Version: 18C0−147

HILTB−FTB	18C0−147	ECS−HP	18C0−147
ECC−B	18C0−147	HNGC−B	18C0−147
HNGS−BA	18C0−147	EDTC−B	18C0−147

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22−Nov−2011 13:19	7042.5 FT	1309.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_004PUP	FN:3	PRODUCER	22−Nov−2011 14:04

Schlumberger

HIRES LOG 10" = 100’

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22−Nov−2011 13:19	7042.5 FT	1309.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_004PUP	FN:3	PRODUCER	22−Nov−2011 14:04

OP System Version: 18C0−147

HILTB−FTB	18C0−147	ECS−HP	18C0−147
ECC−B	18C0−147	HNGC−B	18C0−147
HNGS−BA	18C0−147	EDTC−B	18C0−147

Changed Parameter Summary

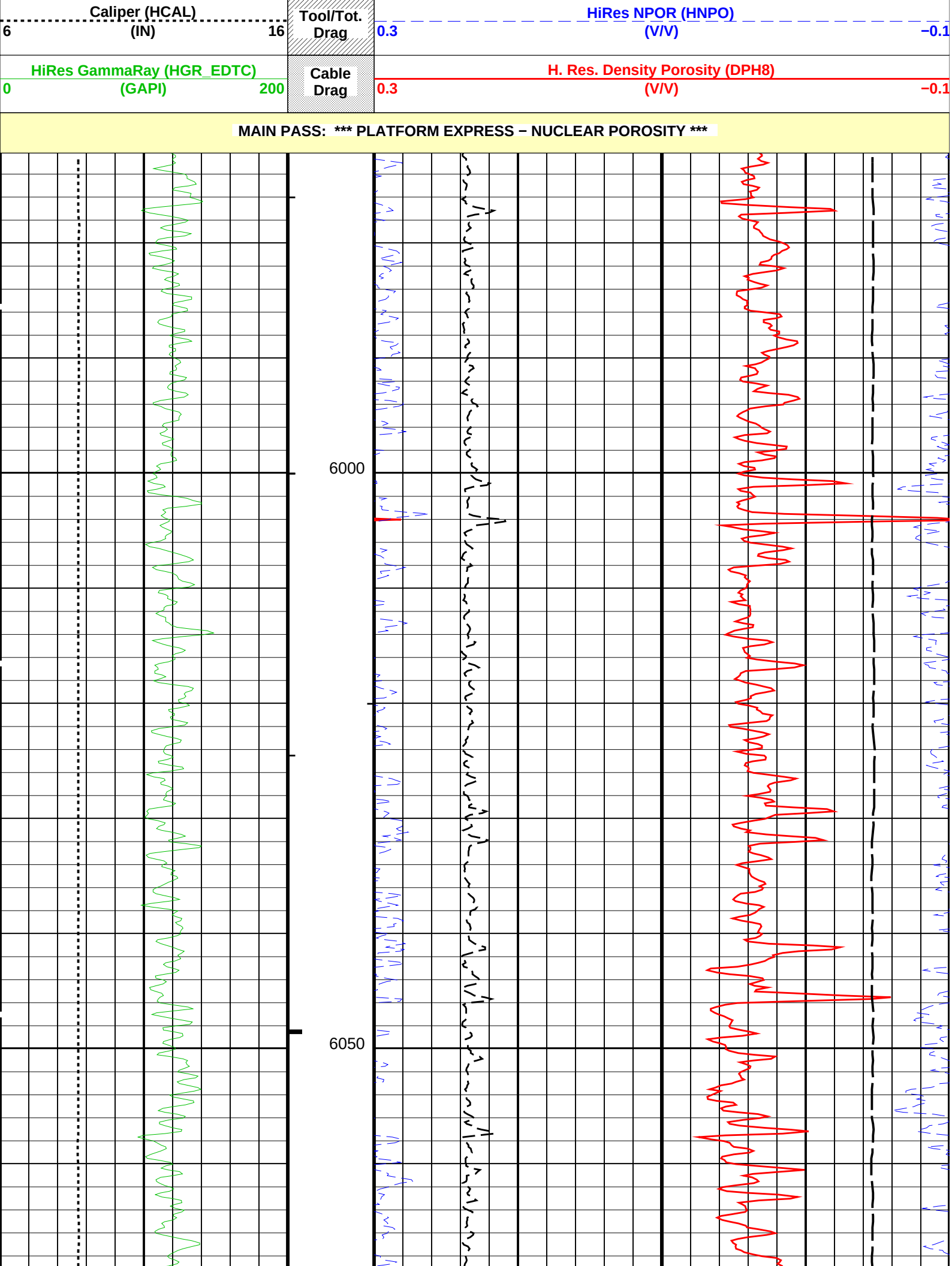
DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	7042.5 14:05:30
	LIMESTONE	SANDSTONE	6562.0 14:05:45
	SANDSTONE	LIMESTONE	6272.0 14:05:54
MDEN	2.65 G/C3	2.65 G/C3	7042.5 14:05:30
	2.71 G/C3	2.65 G/C3	6562.0 14:05:45
	2.65 G/C3	2.71 G/C3	6272.0 14:05:54

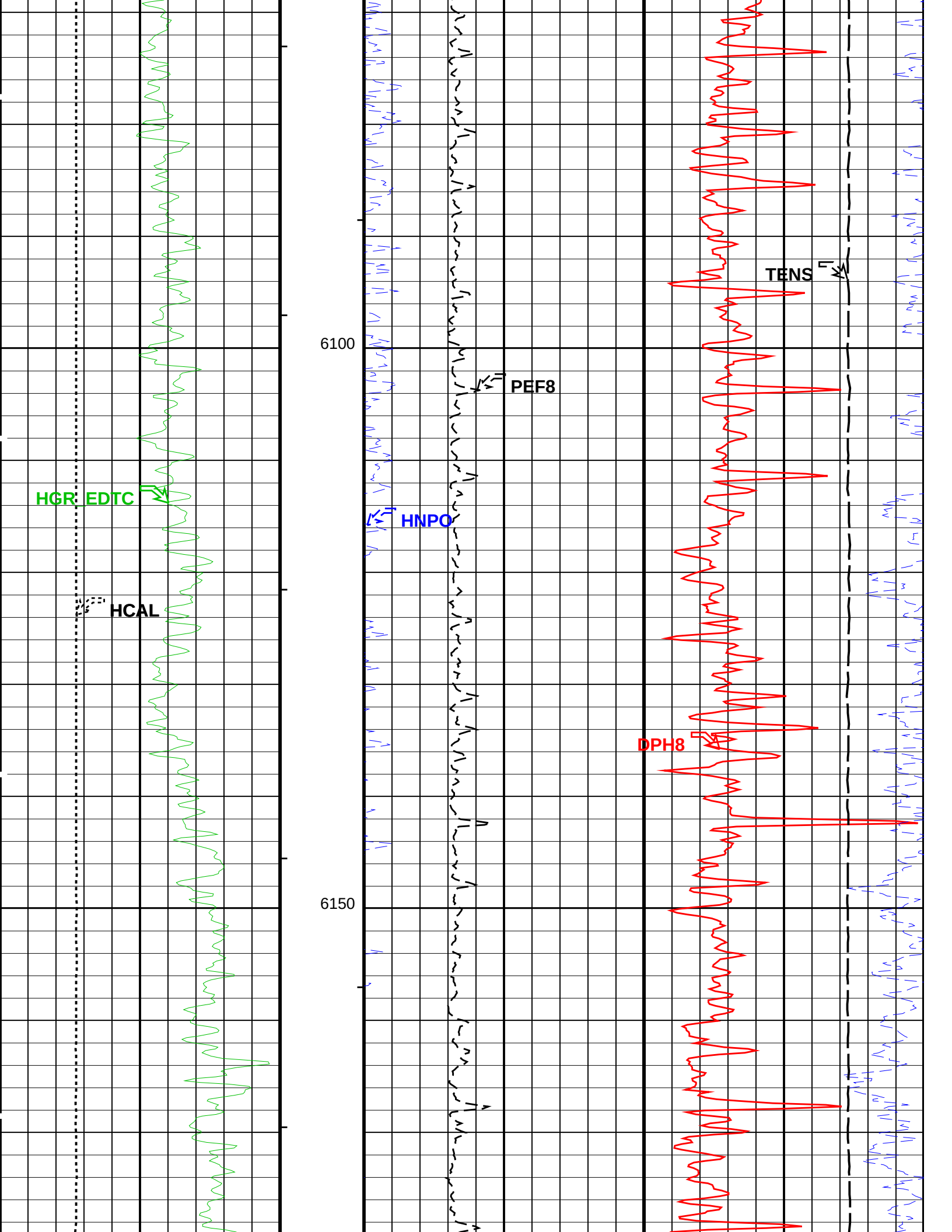
PIP SUMMARY

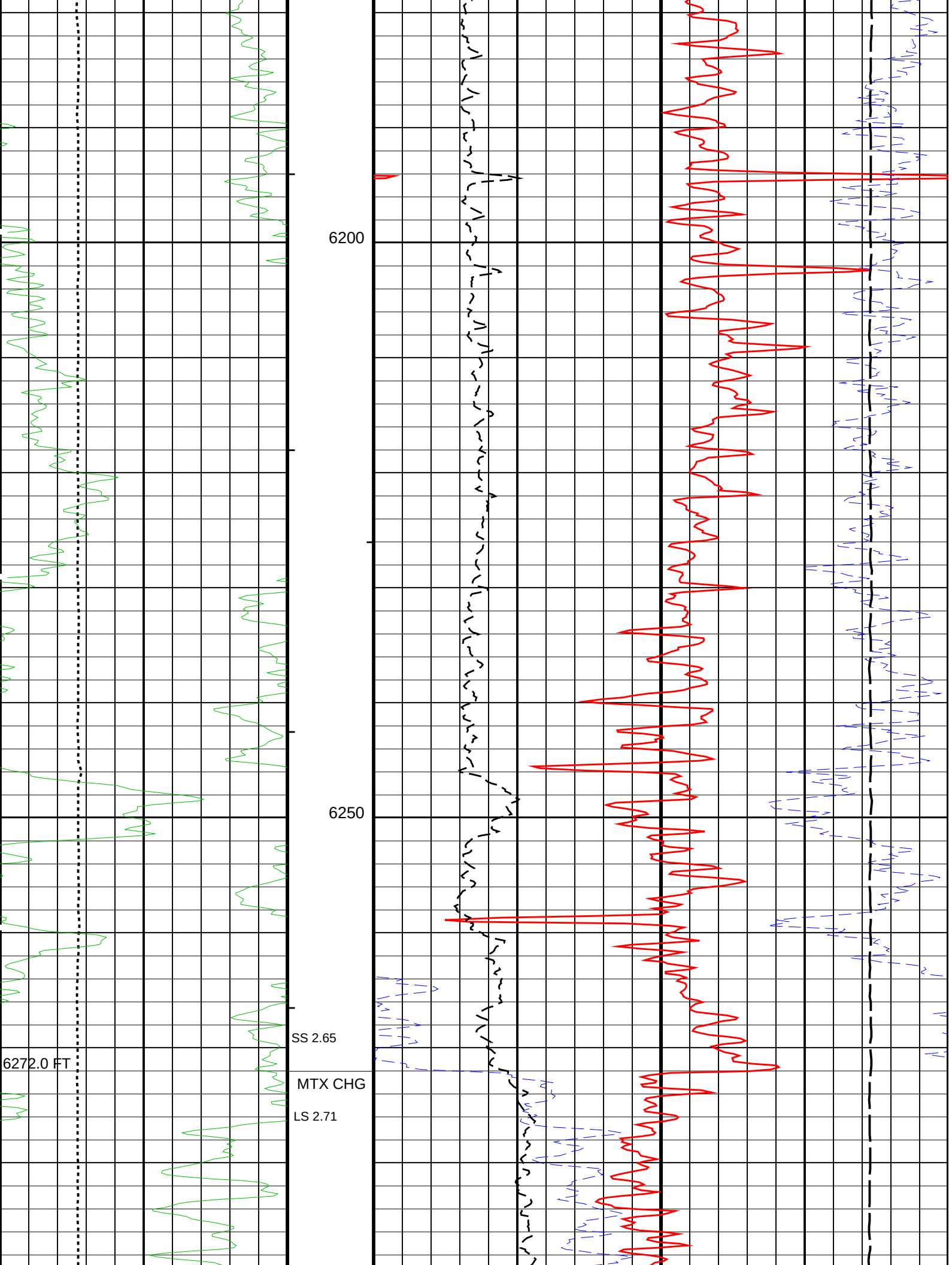
- Integrated Hole Volume Minor Pip Every 10 F3
- Integrated Hole Volume Major Pip Every 100 F3
- Integrated Cement Volume Minor Pip Every 10 F3
- Integrated Cement Volume Major Pip Every 100 F3

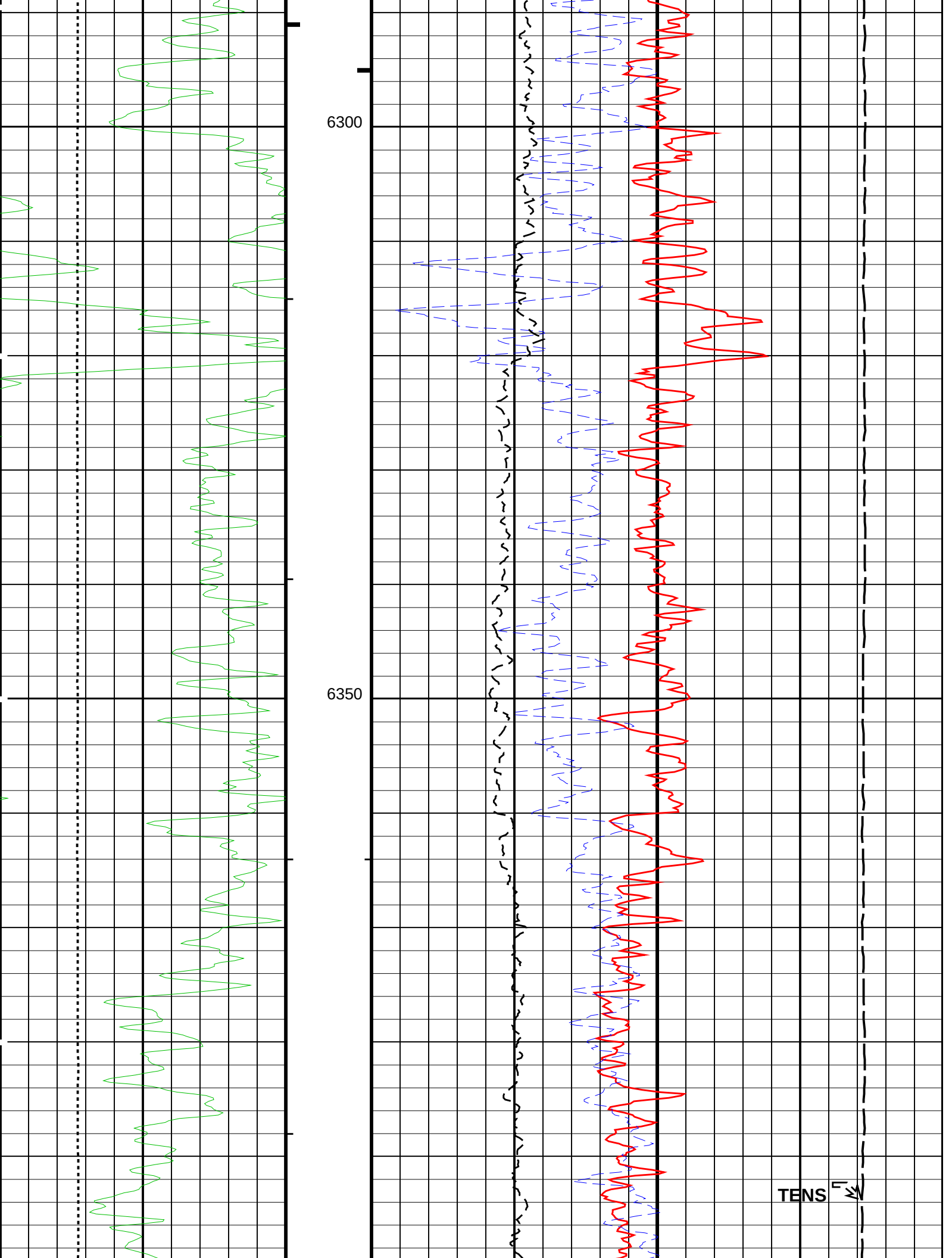
Time Mark Every 60 S

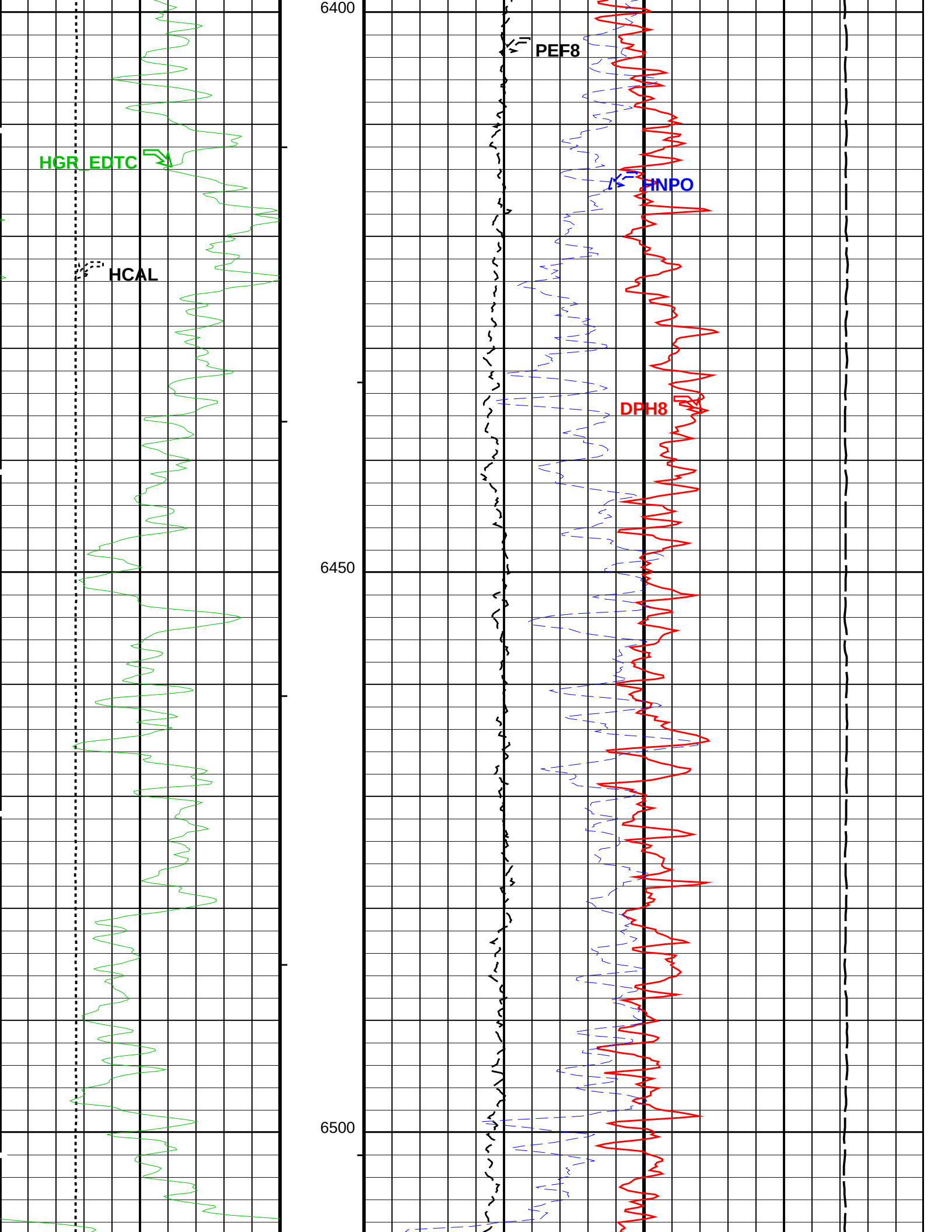
	Stuck Stretch (STIT)	H. Res. Formation Pe (PEF8)	Tension (TENS)
	0 (F) 50	0 (−−−− 10	10000 (LBF) 0

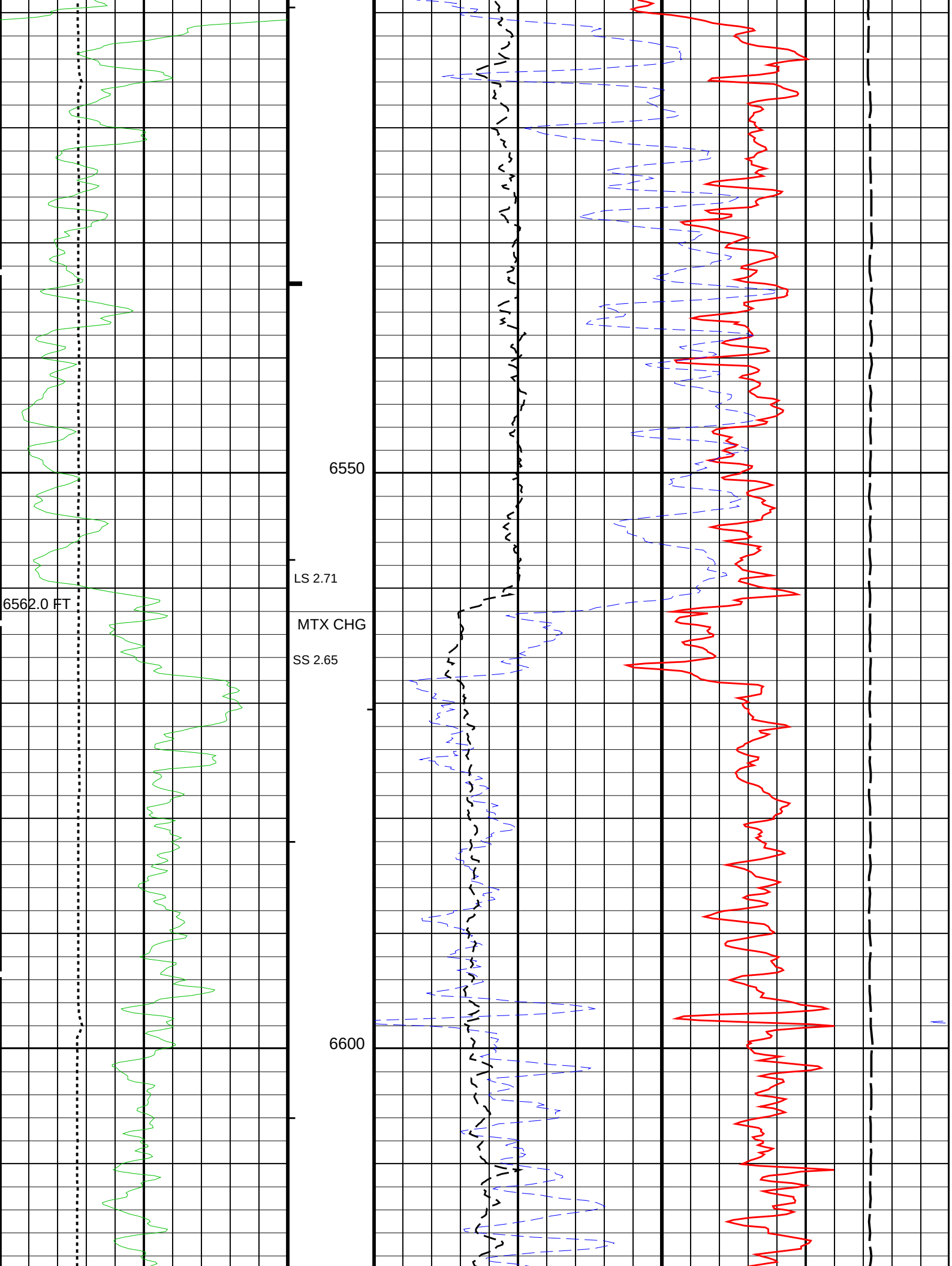

Caliper (HCAL)
6
(IN)
16
Tool/Tot. Drag
HiRes NPOR (HNPO)
0.3
(V/V)
−0.1
HiRes GammaRay (HGR_EDTC)
0
(GAPI)
200
Cable Drag
H. Res. Density Porosity (DPH8)
0.3
(V/V)
−0.1
MAIN PASS: *** PLATFORM EXPRESS − NUCLEAR POROSITY ***
6000
6050

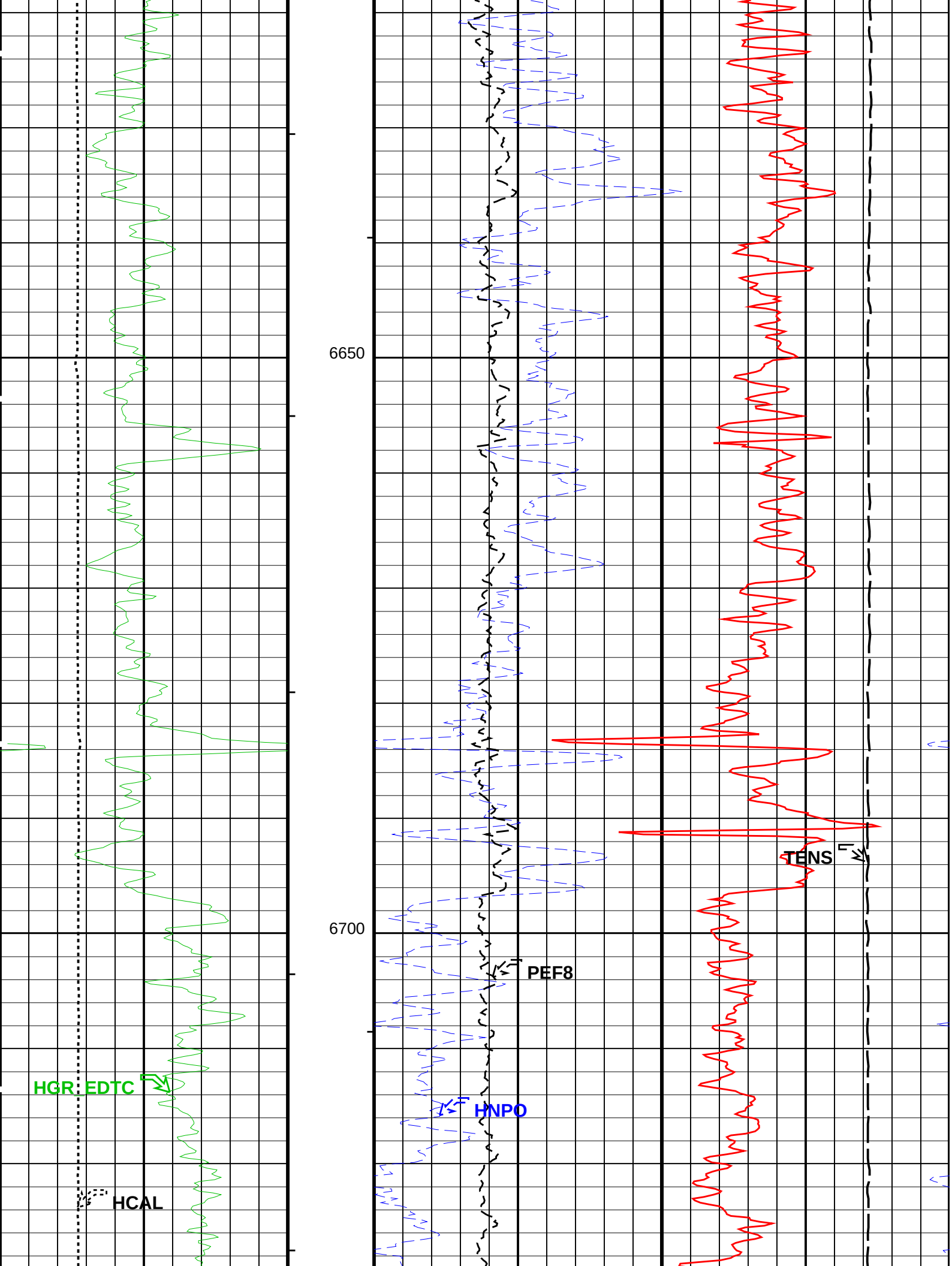

TENS
6100
PEF8
HGR
EDTC
HNPO
HCAL
DPH8
6150

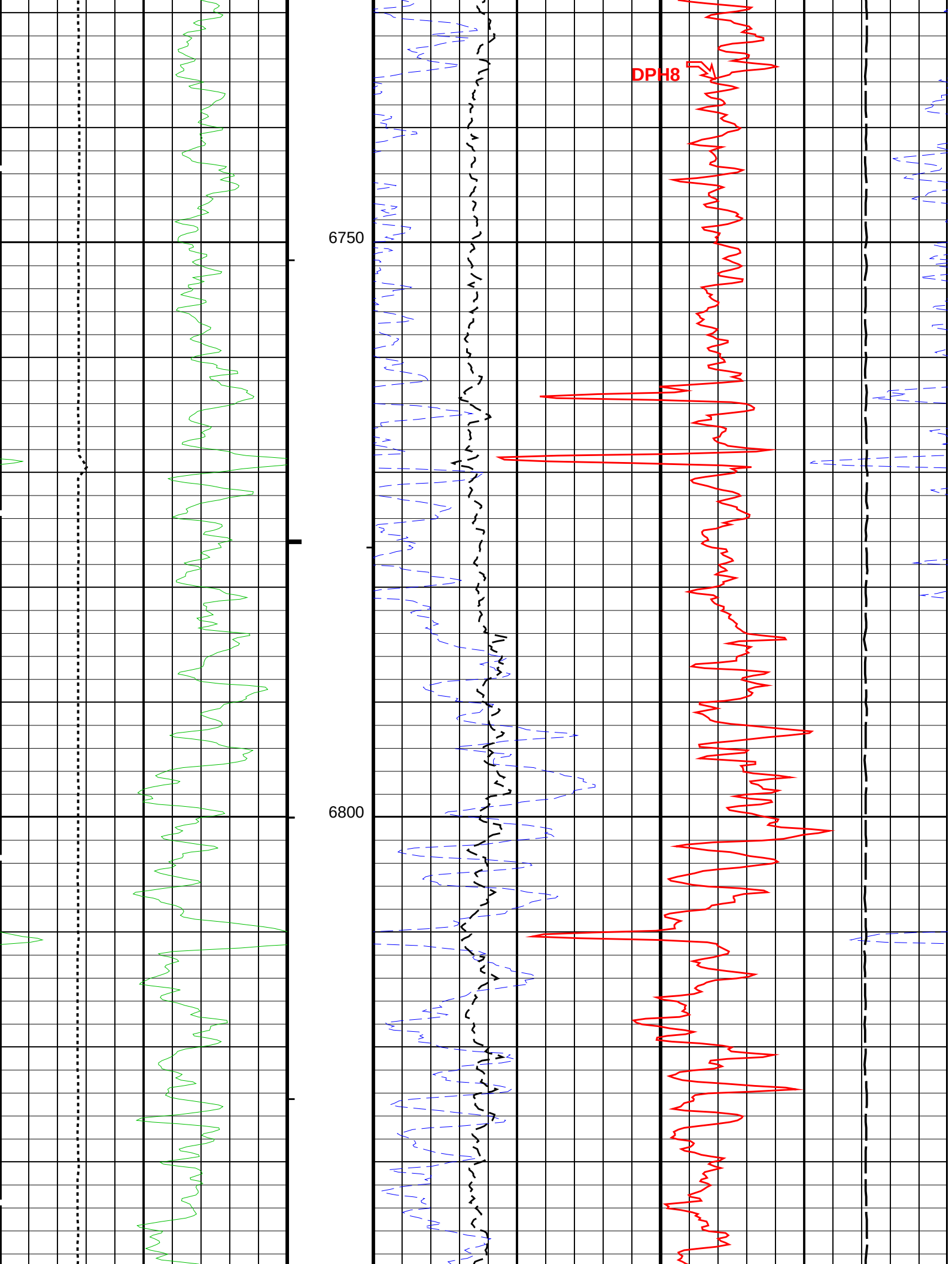

6200
6250
SS 2.65
6272.0 FT
MTX CHG
LS 2.71

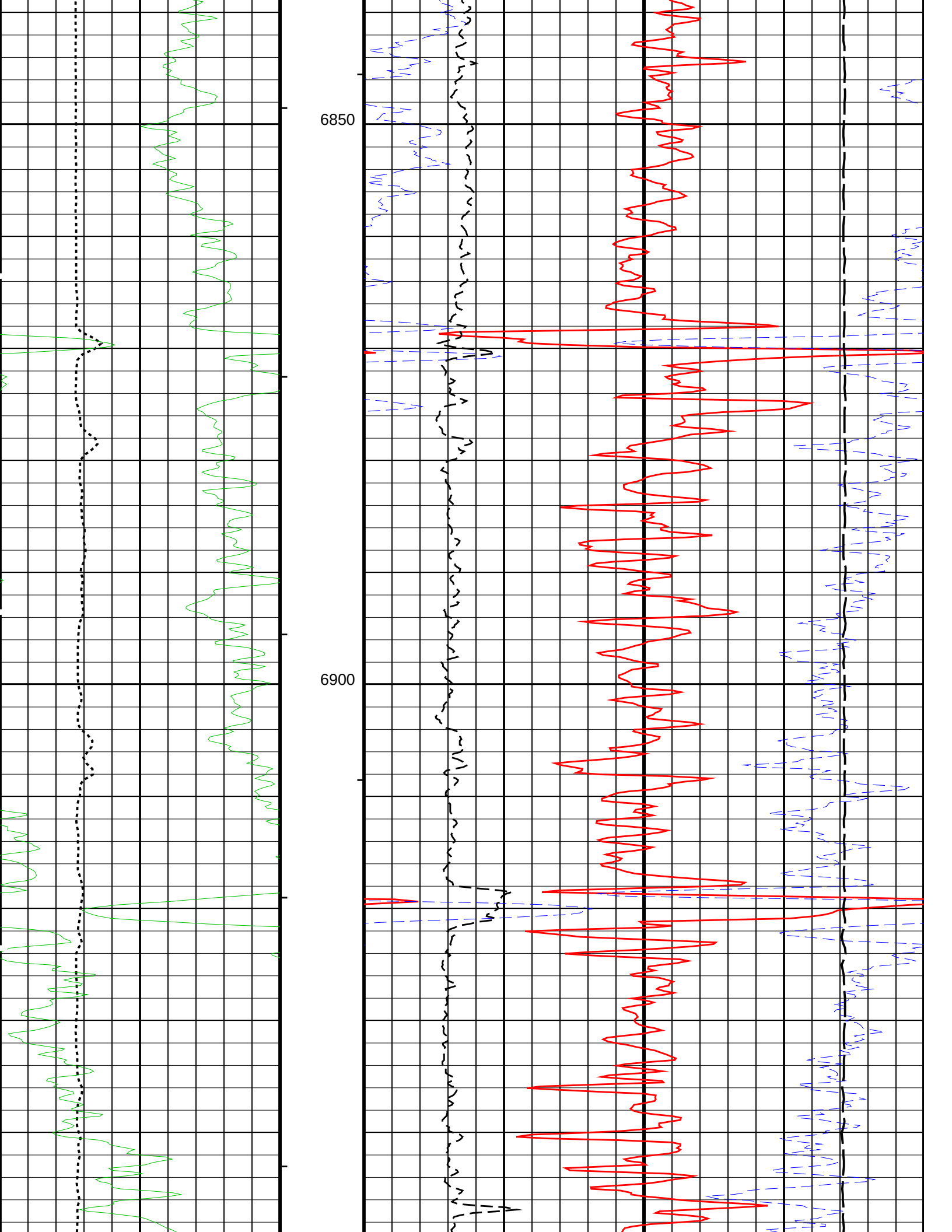

6300
6350
TENS

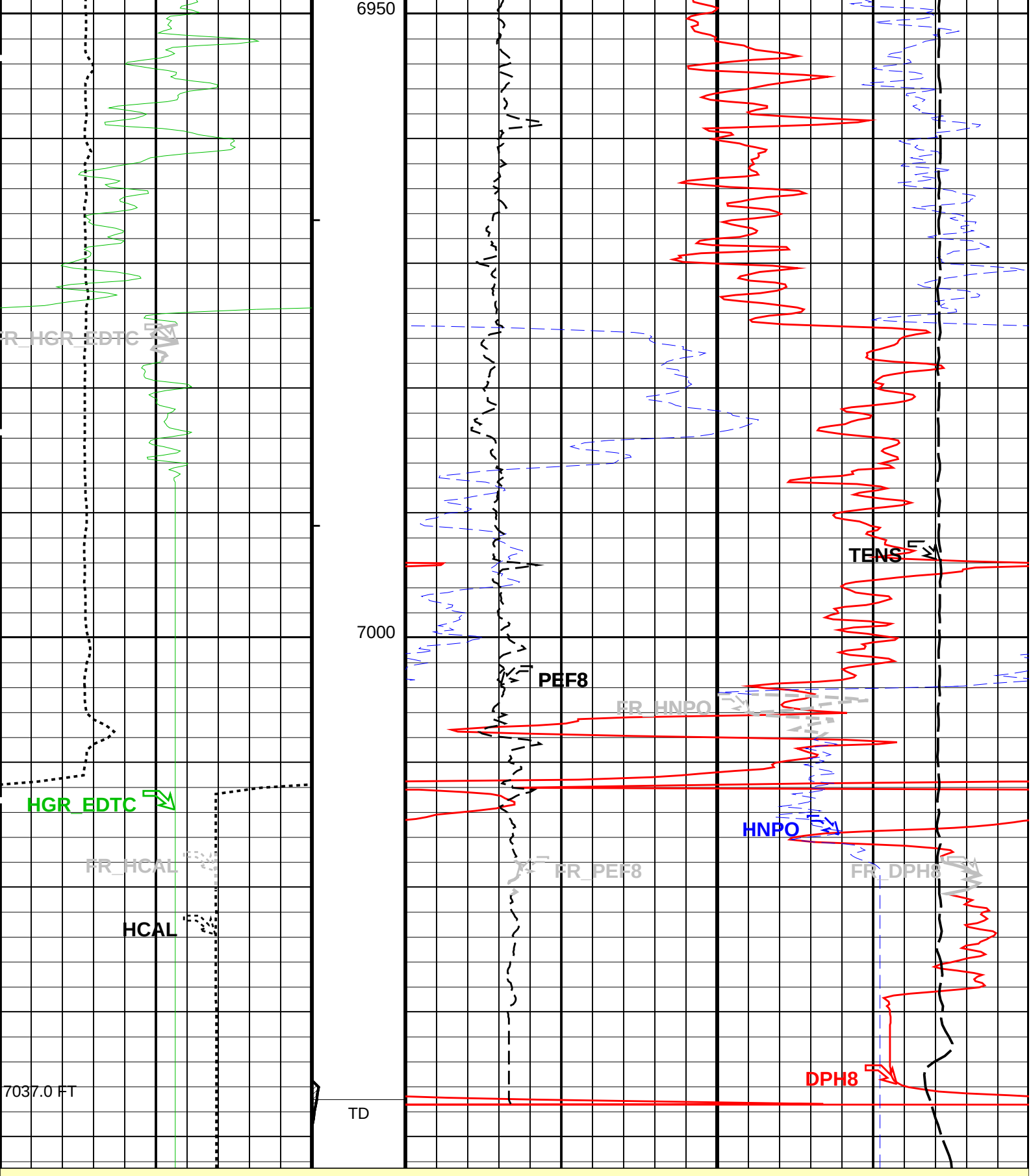

6400
PEF8
HGR EDTC
HNPO
HCAL
DPH8
6450
6500


6550
LS 2.71
6562.0 FT
MTX CHG
SS 2.65
6600


6650
6700
HGR_EDTC
HCAL
HNPO
PEF8
TENS


DPH8
6750
6800


6850
6900



MAIN PASS: *** PLATFORM EXPRESS − NUCLEAR POROSITY ***

HiRes GammaRay (HGR_EDTC) 0 (GAPI) 200	Cable Drag	H. Res. Density Porosity (DPH8) 0.3 (V/V) −0.1
Caliper (HCAL) 6 (IN) 16	Tool/Tot. Drag	HiRes NPOR (HNPO) 0.3 (V/V) −0.1
	Stuck Stretch	H. Res. Formation Pe (PEF8) / Tension (TENS)

Stretch (STIT)			HiRes Formation Pe (PEFZ)			Tension (TENS)		
0	(F)	50	0	(-----	10	10000	(LBF)	0

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 10 F3
- Integrated Hole Volume Major Pip Every 100 F3
- Integrated Cement Volume Minor Pip Every 10 F3
- Integrated Cement Volume Major Pip Every 100 F3
- Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HILTB−FTB: High resolution Integrated Logging Tool−DTS		
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal−like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.65	G/C3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	EDTC−B: Enhanced DTS Cartridge		
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	7	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	PERT: Preliminary Evaluation − Real Time		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG

GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth − Driller	7067.00	FT
TDL	Total Depth − Logger	7037.00	FT
	System and Miscellaneous		
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	−50000.00	PPM
CWEI	Casing Weight	36.00	LB/F
DO	Depth Offset for Playback	0.0	FT
MST	Mud Sample Temperature	193.75	DEGF
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.0117	OHMM
TD	Total Depth	7037	FT

Format: Poro_HiRes_1 **Vertical Scale: 10" per 100'** **Graphics File Created: 22−Nov−2011 14:04**

OP System Version: 18C0−147

HILTB−FTB	18C0−147	ECS−HP	18C0−147
ECC−B	18C0−147	HNGC−B	18C0−147
HNGS−BA	18C0−147	EDTC−B	18C0−147

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22−Nov−2011 13:19	7042.5 FT	1309.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_004PUP	FN:3	PRODUCER	22−Nov−2011 14:04

Schlumberger

REPEAT ANALYSIS

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_039PUP	FN:37	PRODUCER	22−Nov−2011 10:41	7044.0 FT	1309.5 FT
DEFAULT	AIT_TLD_MCFL_CNL_038PUP	FN:36	PRODUCER	22−Nov−2011 10:39	7057.5 FT	6489.0 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22−Nov−2011 11:09

OP System Version: 18C0−147

HILTB−FTB	18C0−147	ECS−HP	18C0−147
ECC−B	18C0−147	HNGC−B	18C0−147
HNGS−BA	18C0−147	EDTC−B	SRPC−4072−Q4_2010_OP18

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	7042.5 11:11:07
	LIMESTONE	SANDSTONE	6562.0 11:11:22
MDEN	2.65 G/C3	2.65 G/C3	7042.5 11:11:07

2.71 G/C3 2.65 G/C3 6562.0 11:11:22

PIP SUMMARY

Integrated Hole Volume Minor Pip Every 10 F3
Integrated Hole Volume Major Pip Every 100 F3
Integrated Cement Volume Minor Pip Every 10 F3
Integrated Cement Volume Major Pip Every 100 F3
Time Mark Every 60 S

HCAL_REP Curve (HCAL_REP)
6 (IN) 16

GR_REP Curve (GR_REP)
0 (GAPI) 200

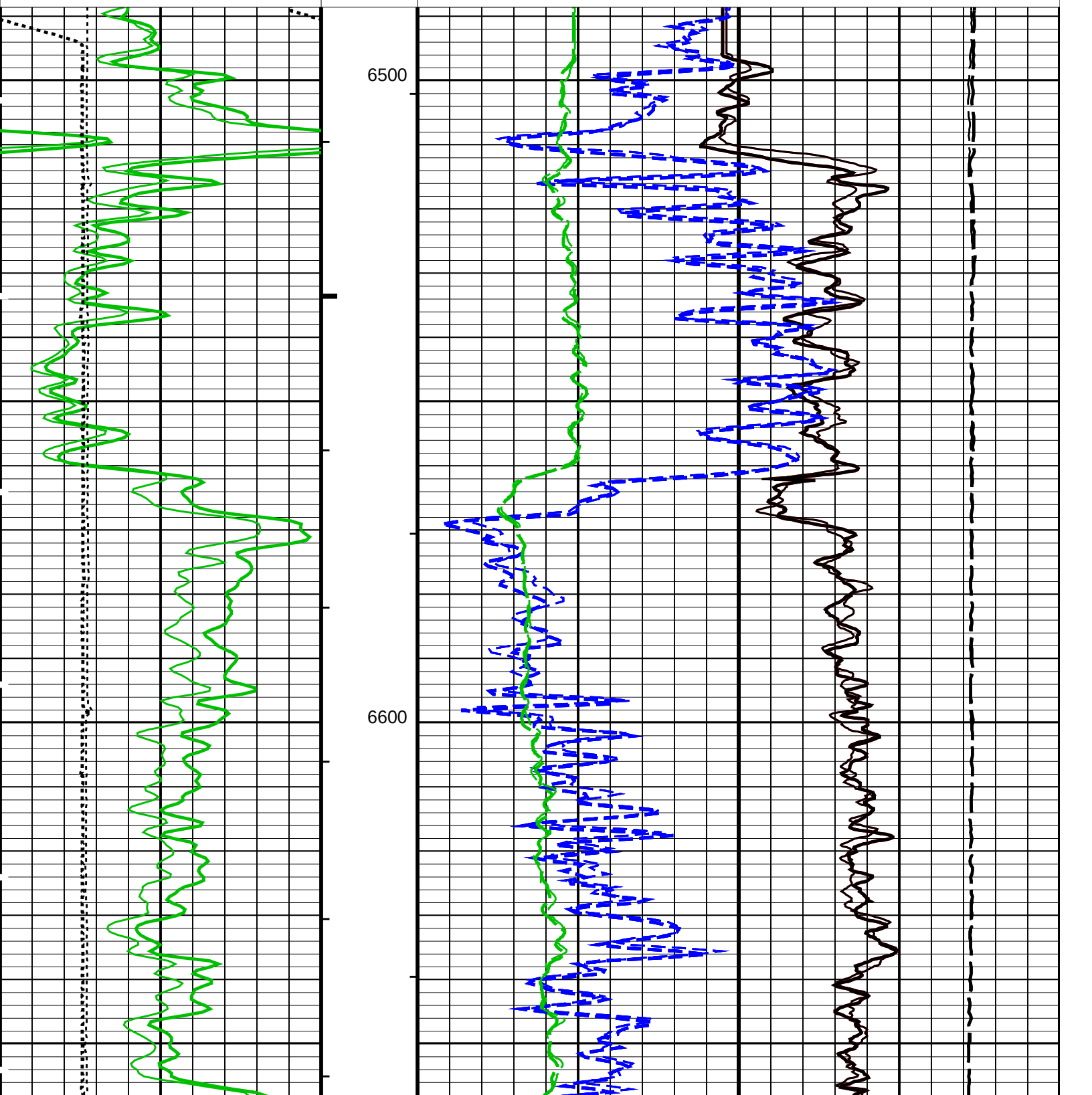
Gamma Ray (GR_EDTC)
0 (GAPI) 200

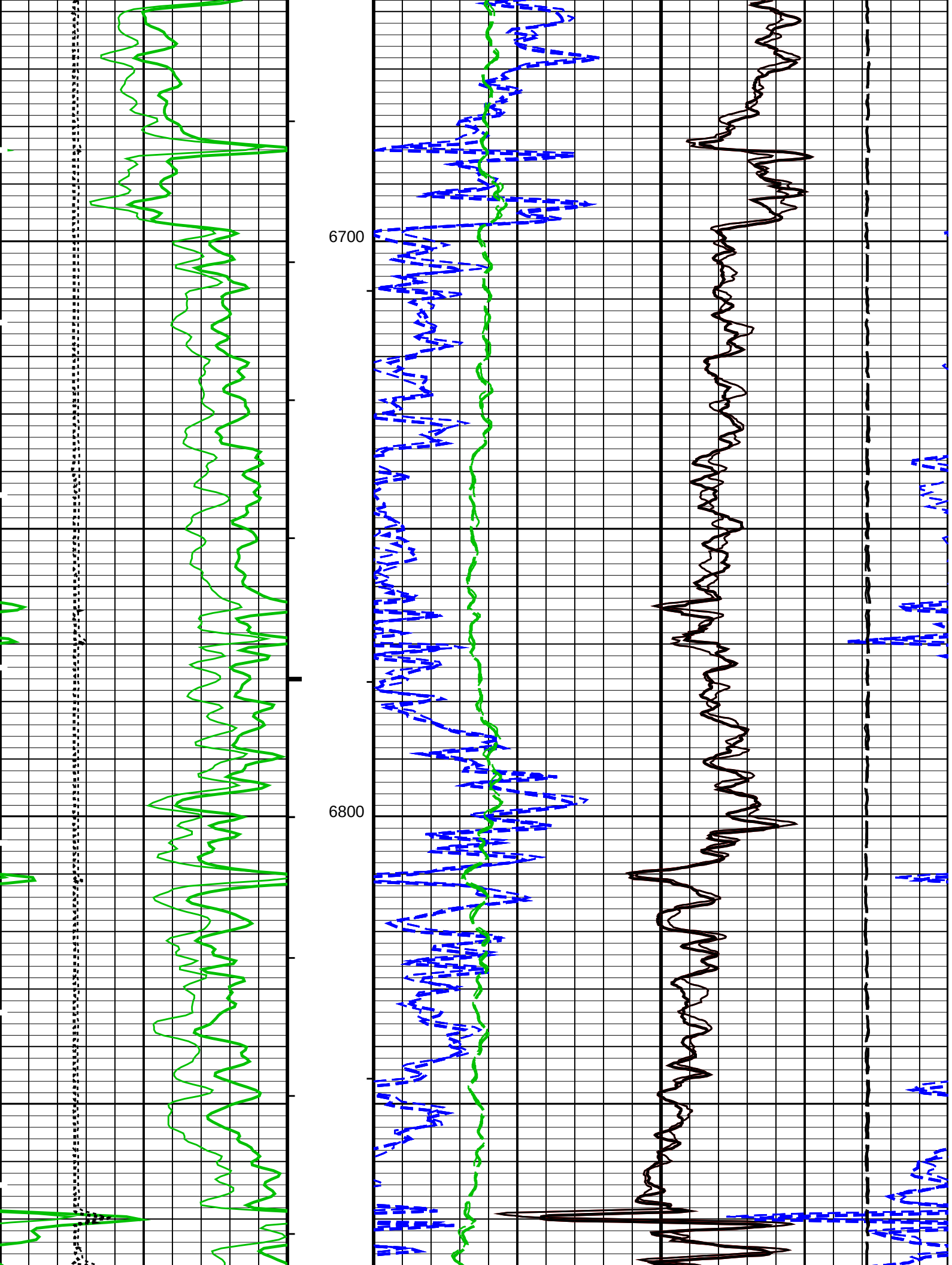
PEFZ_REP Curve (PEFZ_REP)
0 (----- 10

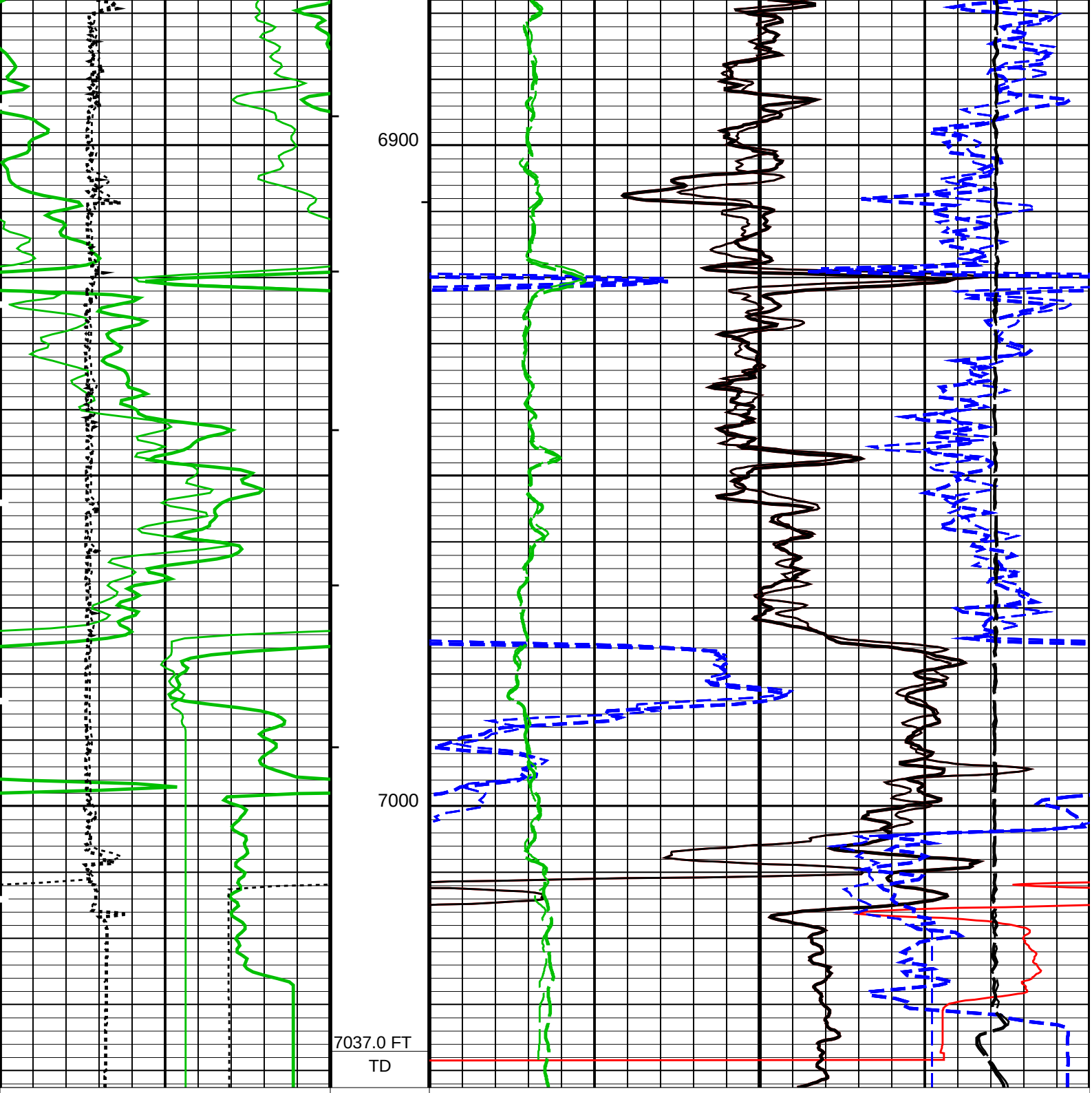
TENS_REP Curve (TENS_REP)
10000 (LBF) 0

NPOR_REP Curve (NPOR_REP)
0.3 (V/V) -0.1

DPHZ_REP Curve (DPHZ_REP)
0.3 (V/V) -0.1




6700
6800



Gamma Ray (GR_EDTC)
0 (GAPI) 200

GR_REP Curve (GR_REP)
0 (GAPI) 200

HCAL_REP Curve (HCAL_REP)
6 (IN) 16

DPHZ_REP Curve (DPHZ_REP)
0.3 (V/V) −0.1

NPOR_REP Curve (NPOR_REP)
0.3 (V/V) −0.1

PEFZ_REP Curve (PEFZ_REP)
0 (−−−− 10

TENS_REP Curve (TENS_REP)
10000 (LBF) 0

PIP SUMMARY

Integrated Hole Volume Minor Pip Every 10 F3
Integrated Hole Volume Major Pip Every 100 F3
Integrated Cement Volume Minor Pip Every 10 F3
Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HILTB−FTB: High resolution Integrated Logging Tool−DTS		
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal−like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.65	G/C3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	EDTC−B: Enhanced DTS Cartridge		
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	7	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	PERT: Preliminary Evaluation − Real Time		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	STI: Stuck Tool Indicator		
TDL	Total Depth − Logger	7037.00	FT
	System and Miscellaneous		
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	36.00	LB/F
DFD	Drilling Fluid Density	9.20	LB/G
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
MST	Mud Sample Temperature	193.75	DEGF

MST	Mud Sample Temperature	193.75	DEGF
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.0117	OHMM
TD	Total Depth	7037	FT

Format: PORO_REP Vertical Scale: 5" per 100' Graphics File Created: 22-Nov-2011 11:11

OP System Version: 18C0-147

HILTB-FTB	18C0-147	ECS-HP	18C0-147
ECC-B	18C0-147	HNGC-B	18C0-147
HNGS-BA	18C0-147	EDTC-B	SRPC-4072-Q4_2010_OP18

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_039PUP	FN:37	PRODUCER	22-Nov-2011 10:41	7044.0 FT	1309.5 FT
DEFAULT	AIT_TLD_MCFL_CNL_038PUP	FN:36	PRODUCER	22-Nov-2011 10:39	7057.5 FT	6489.0 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22-Nov-2011 11:09		

Schlumberger

MAIN DENSITY LOG 5" = 100'

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22-Nov-2011 13:19	7042.5 FT	1309.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_004PUP	FN:3	PRODUCER	22-Nov-2011 14:04	7042.5 FT	1309.5 FT

OP System Version: 18C0-147

HILTB-FTB	18C0-147	ECS-HP	18C0-147
ECC-B	18C0-147	HNGC-B	18C0-147
HNGS-BA	18C0-147	EDTC-B	18C0-147

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	7042.5 14:05:30
	LIMESTONE	SANDSTONE	6562.0 14:05:45
	SANDSTONE	LIMESTONE	6272.0 14:05:54

PIP SUMMARY

Time Mark Every 60 S

SHALE

SAND

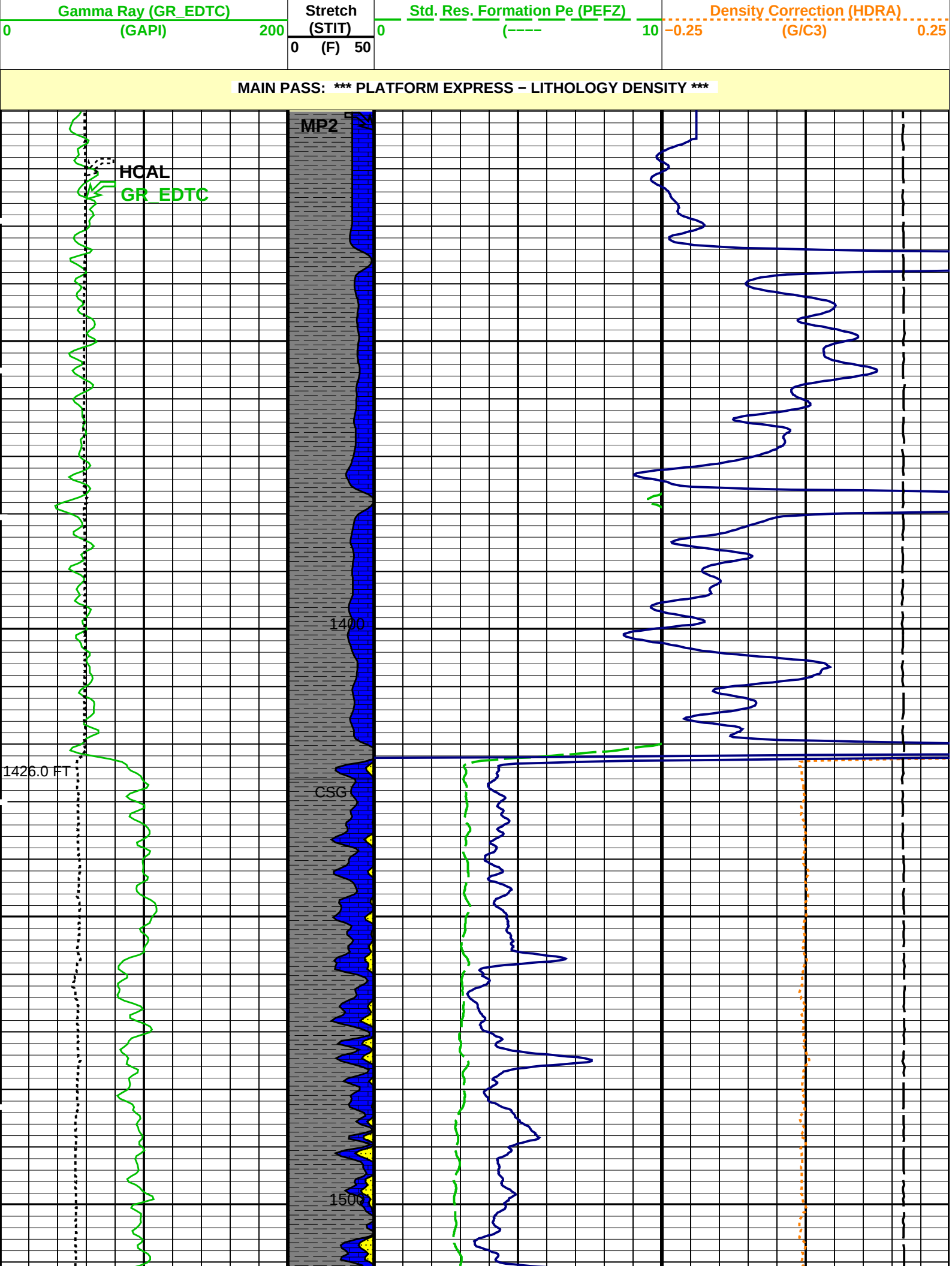
Tension (TENS)
10000 (LBF) 0

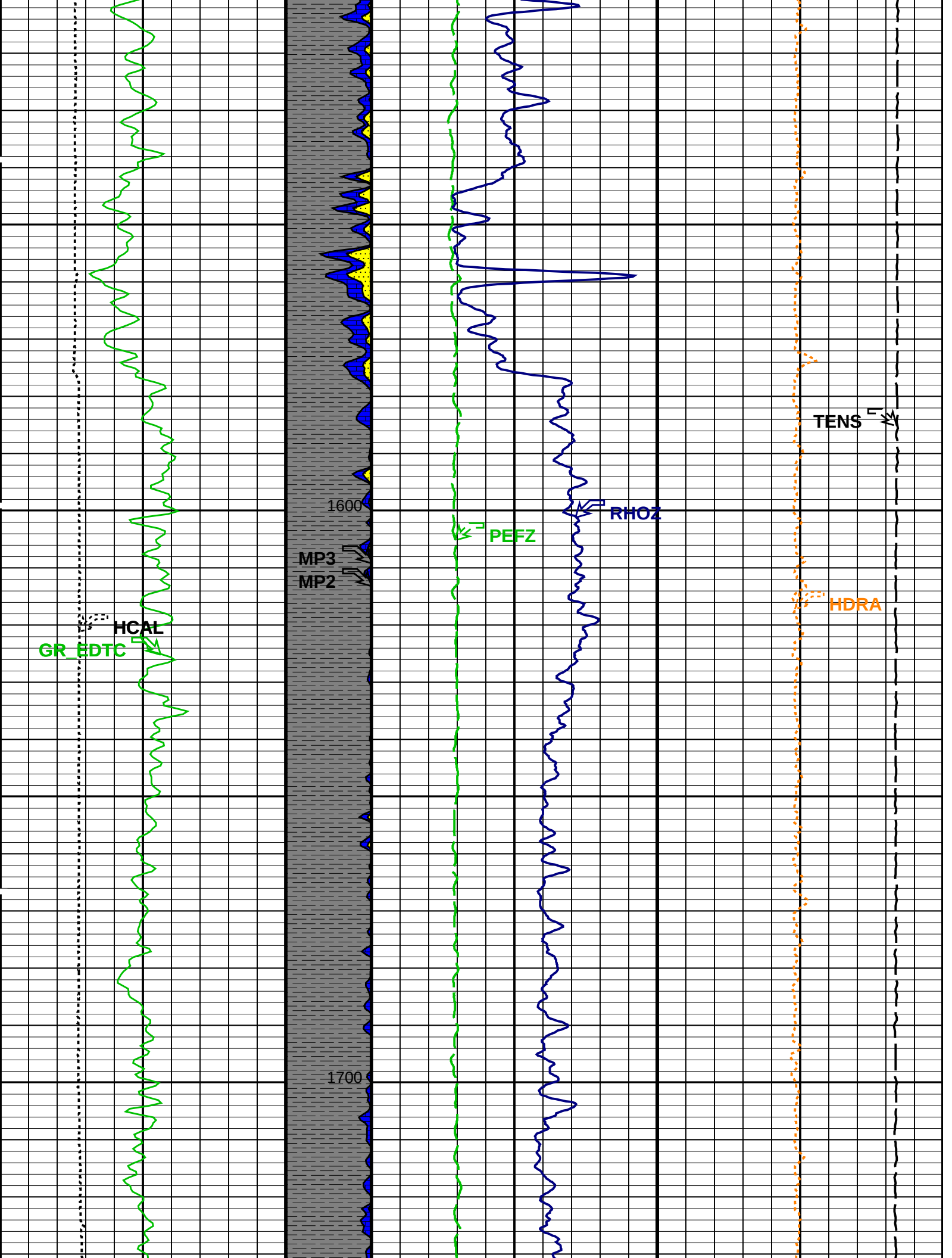
Caliper (HCAL)
6 (IN) 16

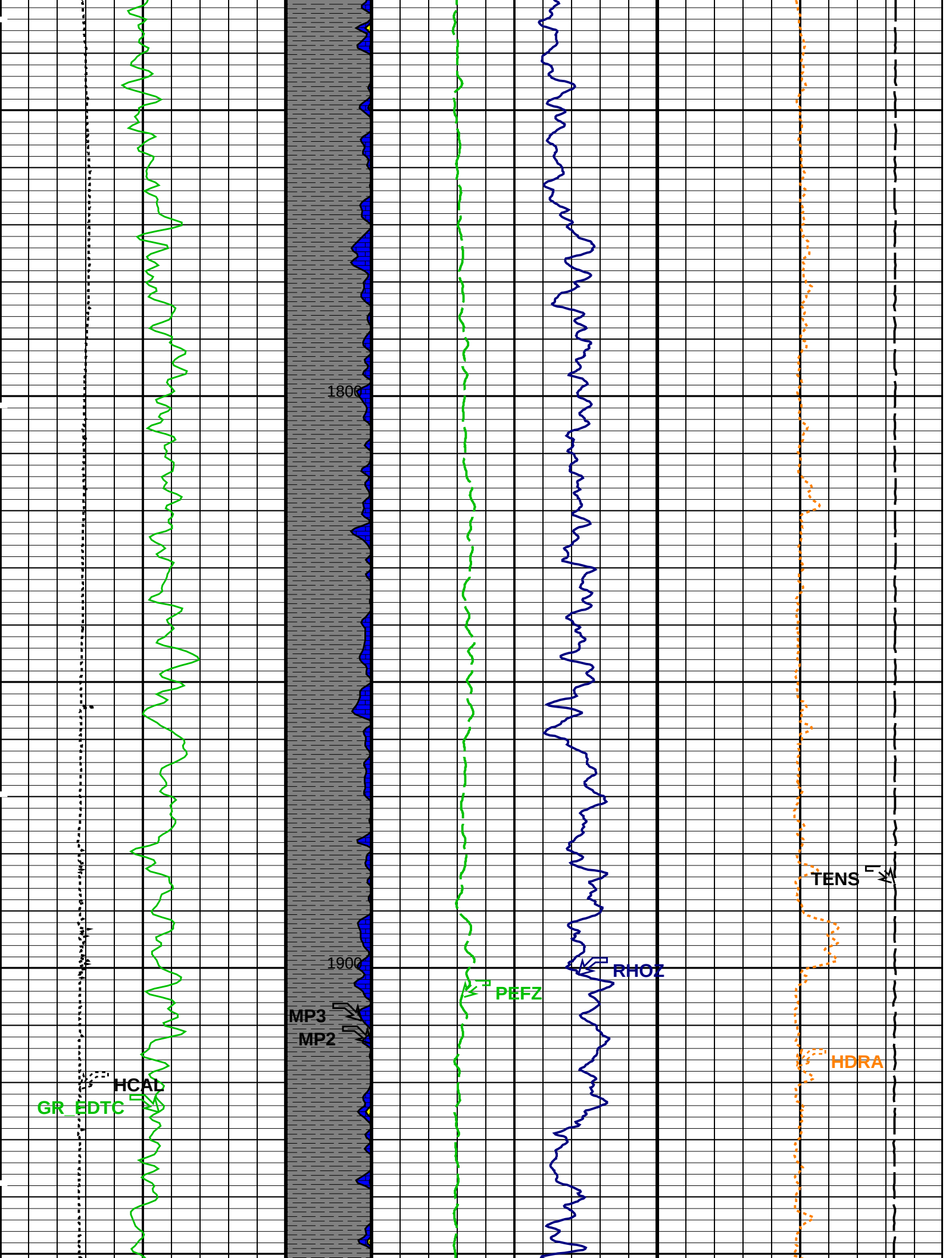
LIME

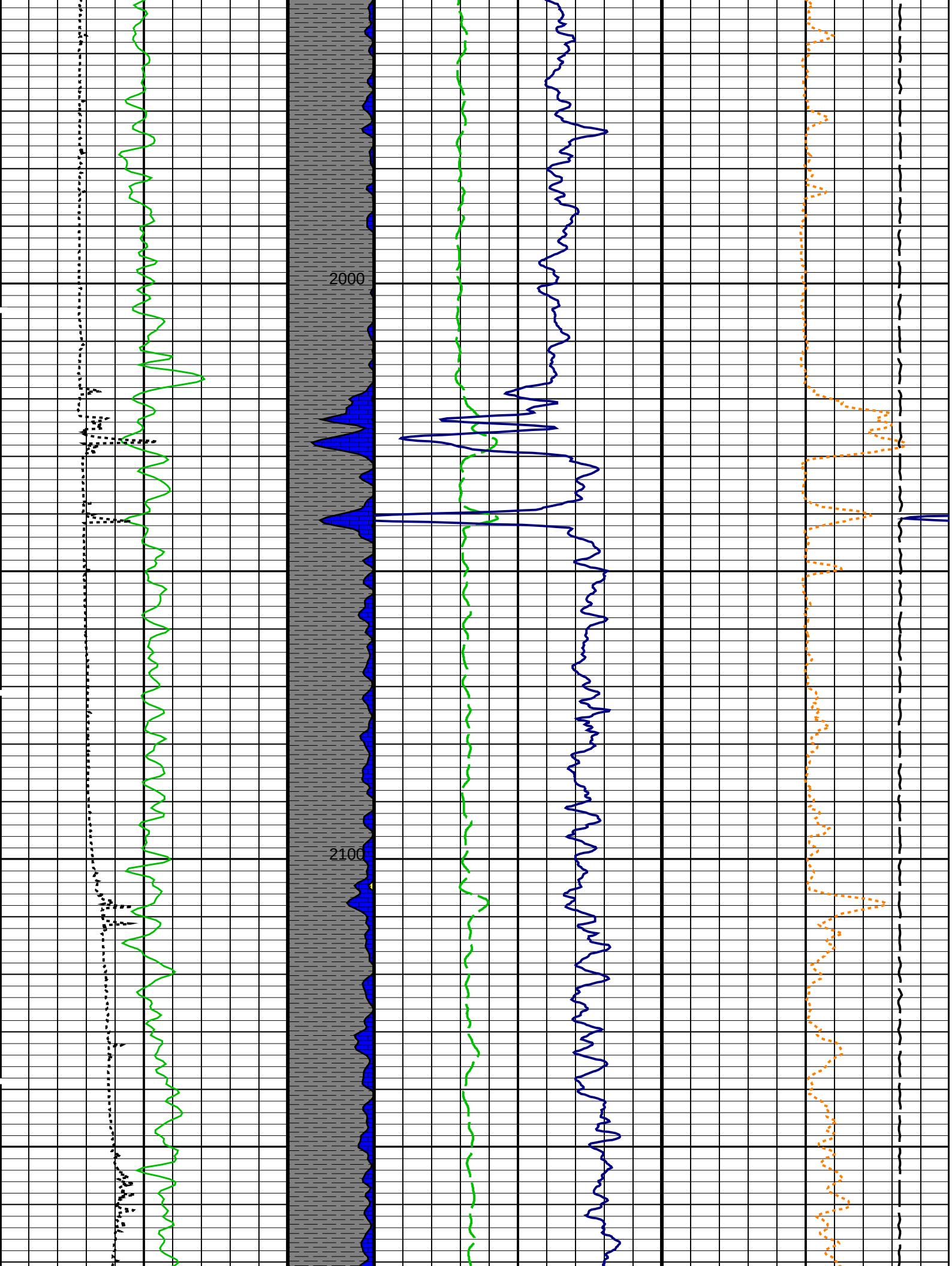
Std. Res. Formation Density (RHOZ)
2 (G/C3) 3

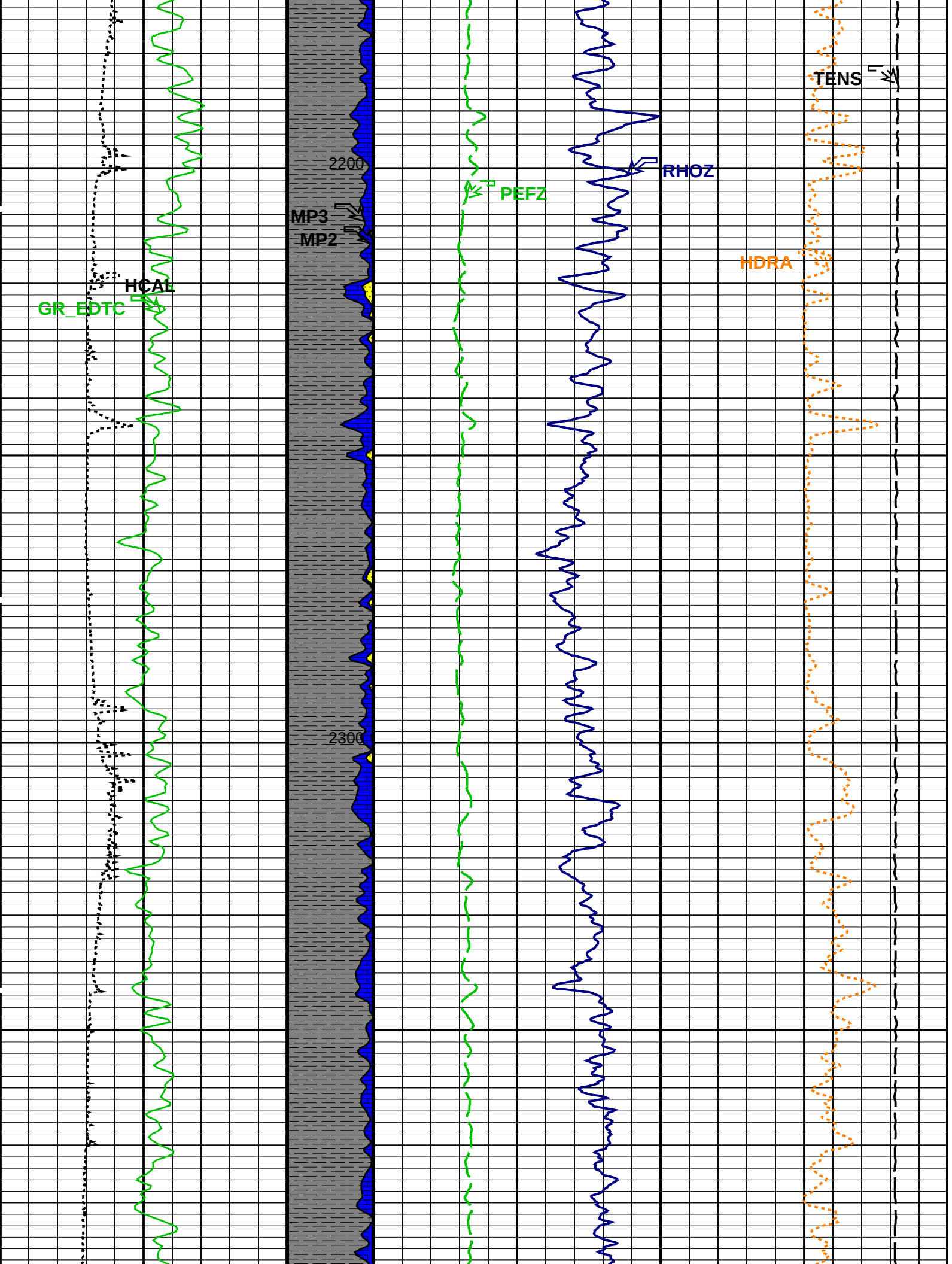
Stuck

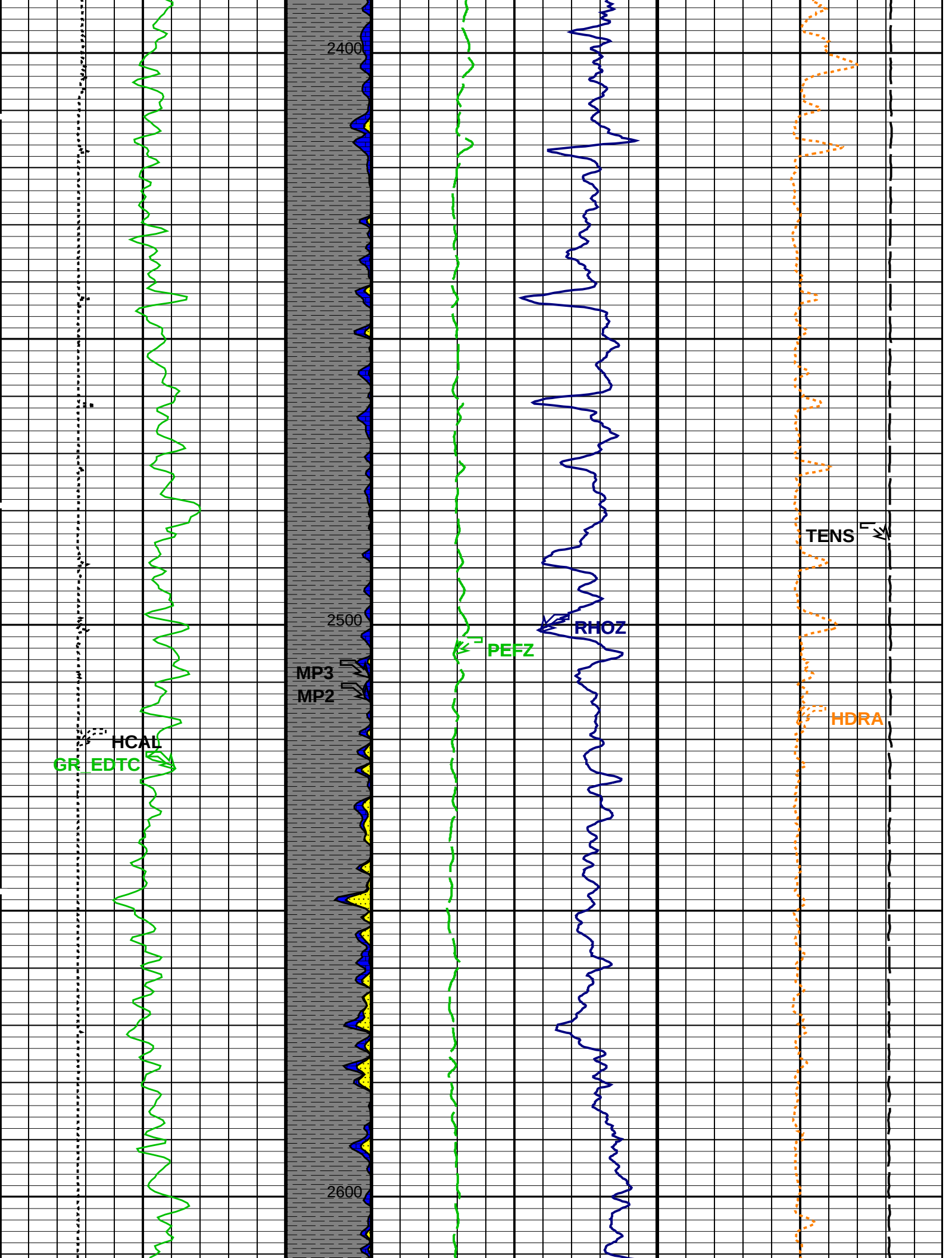

Gamma Ray (GR_EDTC)
0
(GAPI)
200
Stretch
(STIT)
0
(F)
50
Std. Res. Formation Pe (PEFZ)
0
(----
10
Density Correction (HDRA)
-0.25
(G/C3)
0.25
MAIN PASS: *** PLATFORM EXPRESS - LITHOLOGY DENSITY ***
MP2
HCAL
GR_EDTC
1400
1426.0 FT
CSG
1500

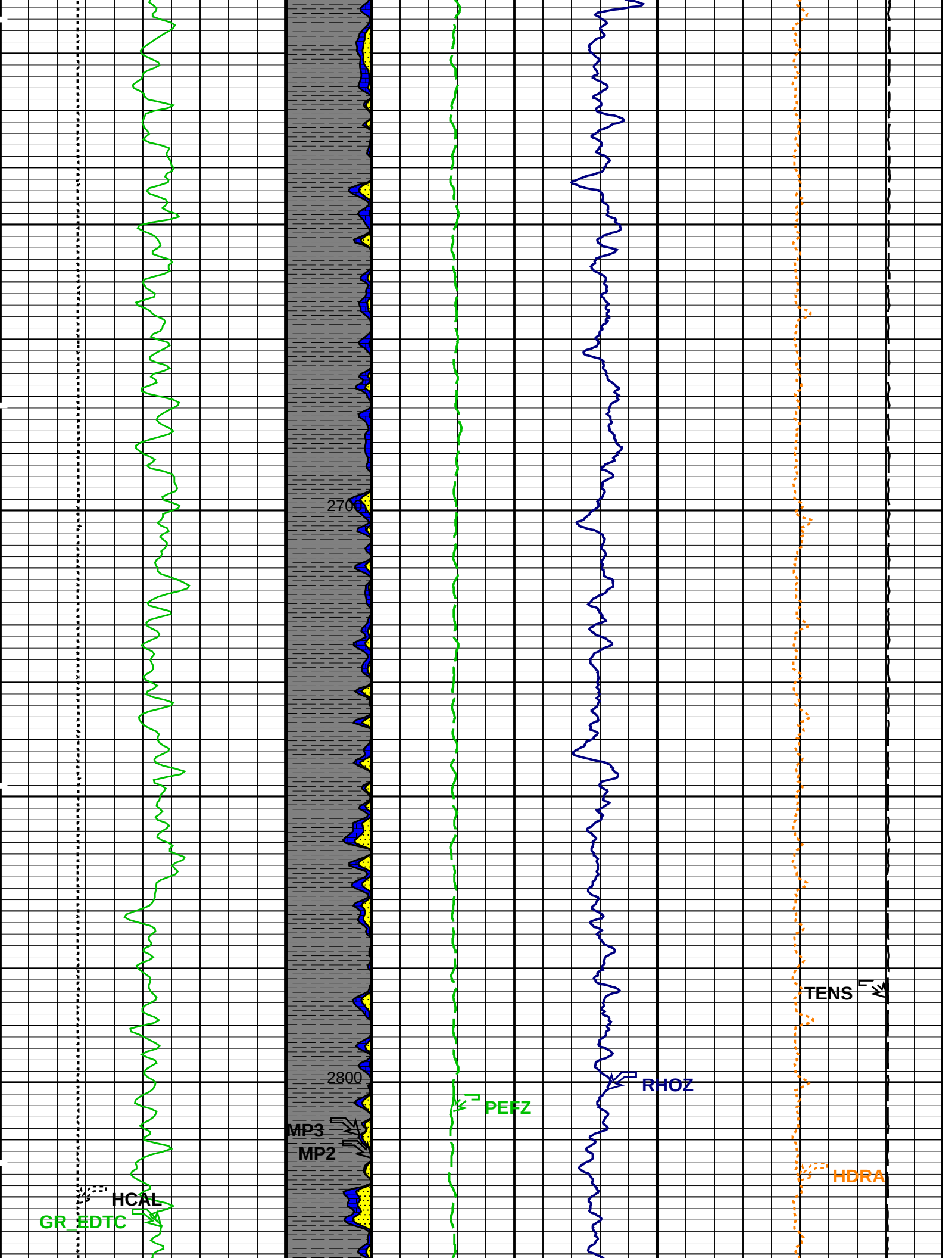

TENS
1600
RHOZ
PEFZ
MP3
MP2
HDRA
HCAL
GR_EDTC
1700

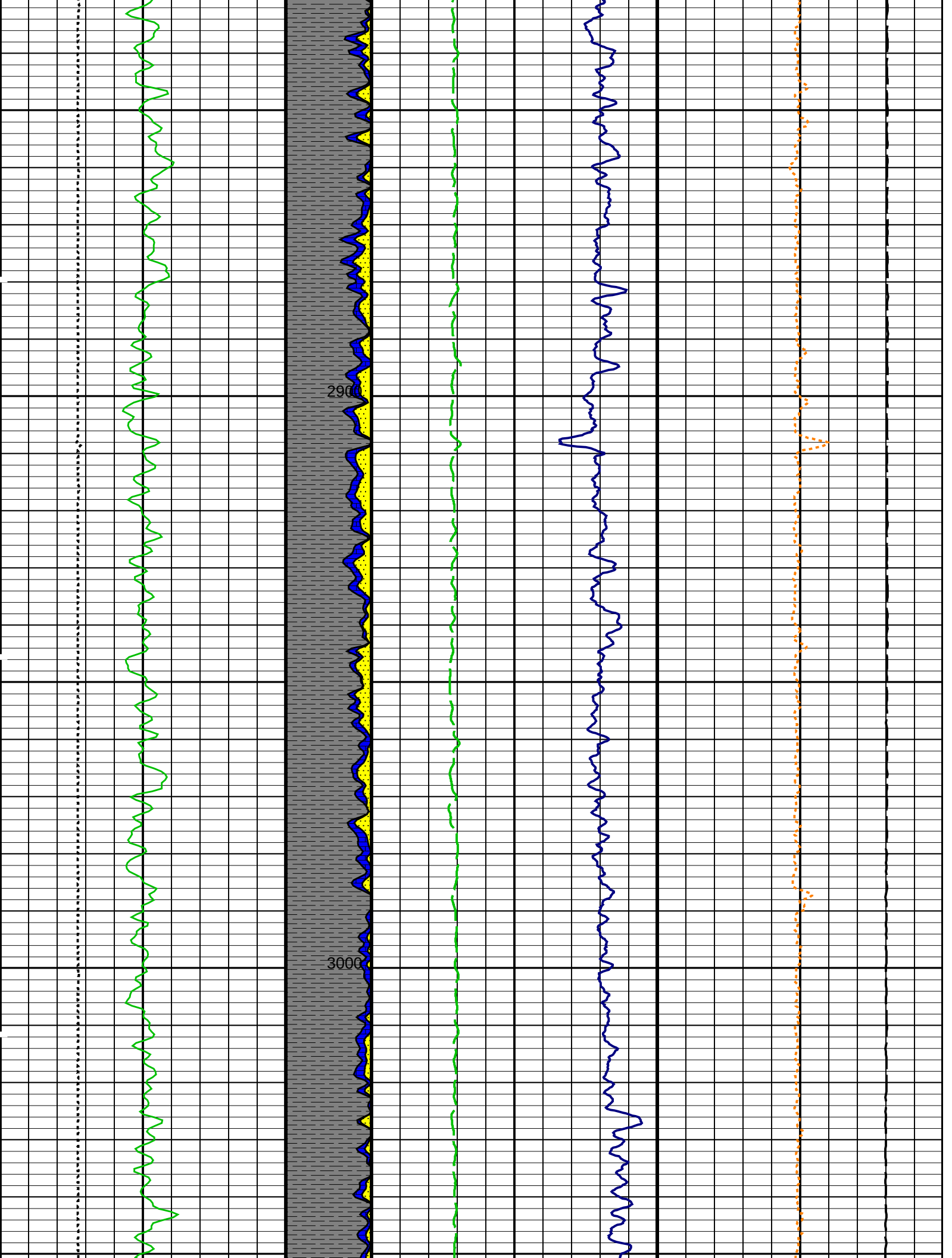

1800
1900
MP3
MP2
HCAL
GR_EDTC
PEFZ
RHOZ
TENS
HDRA

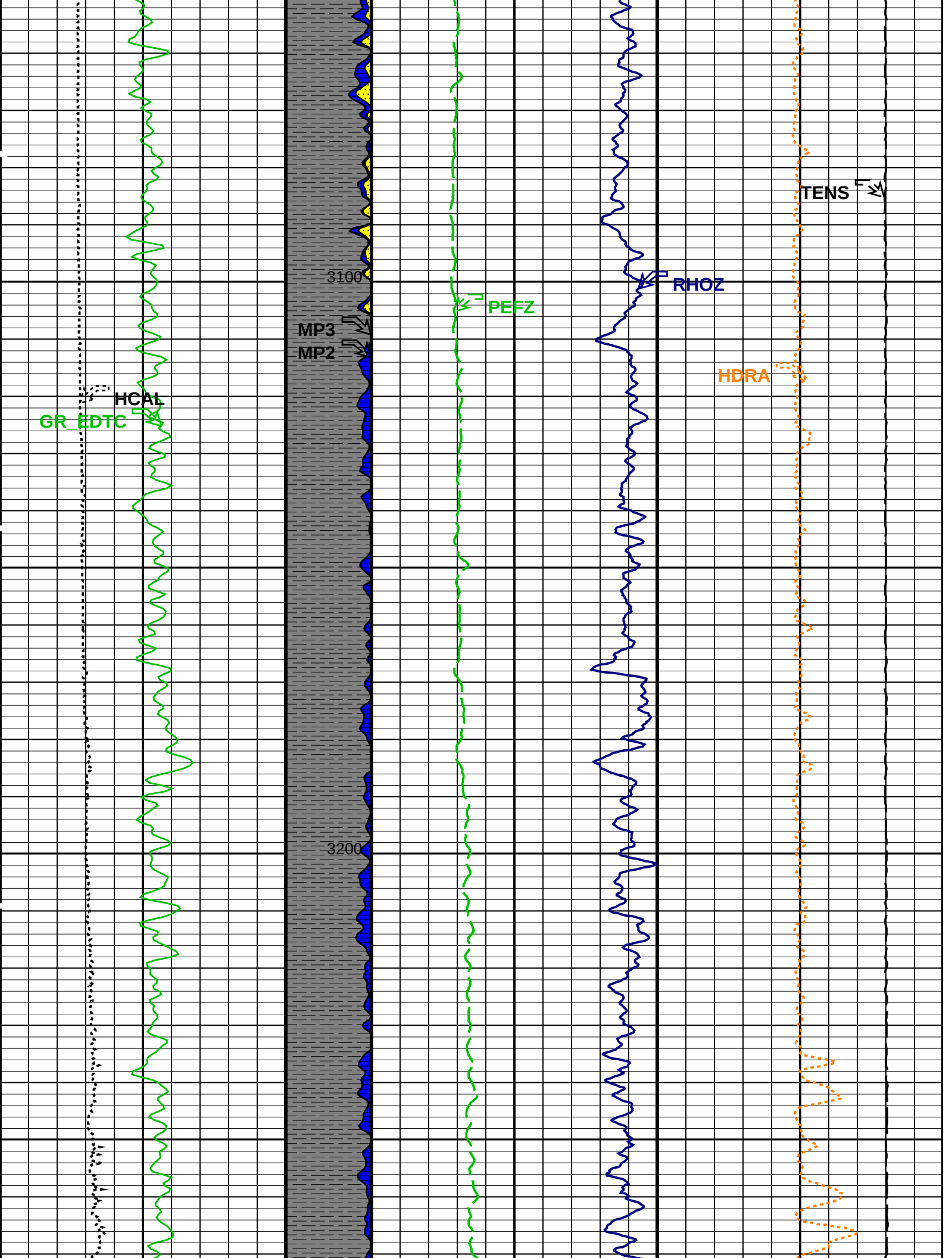

2000
2100

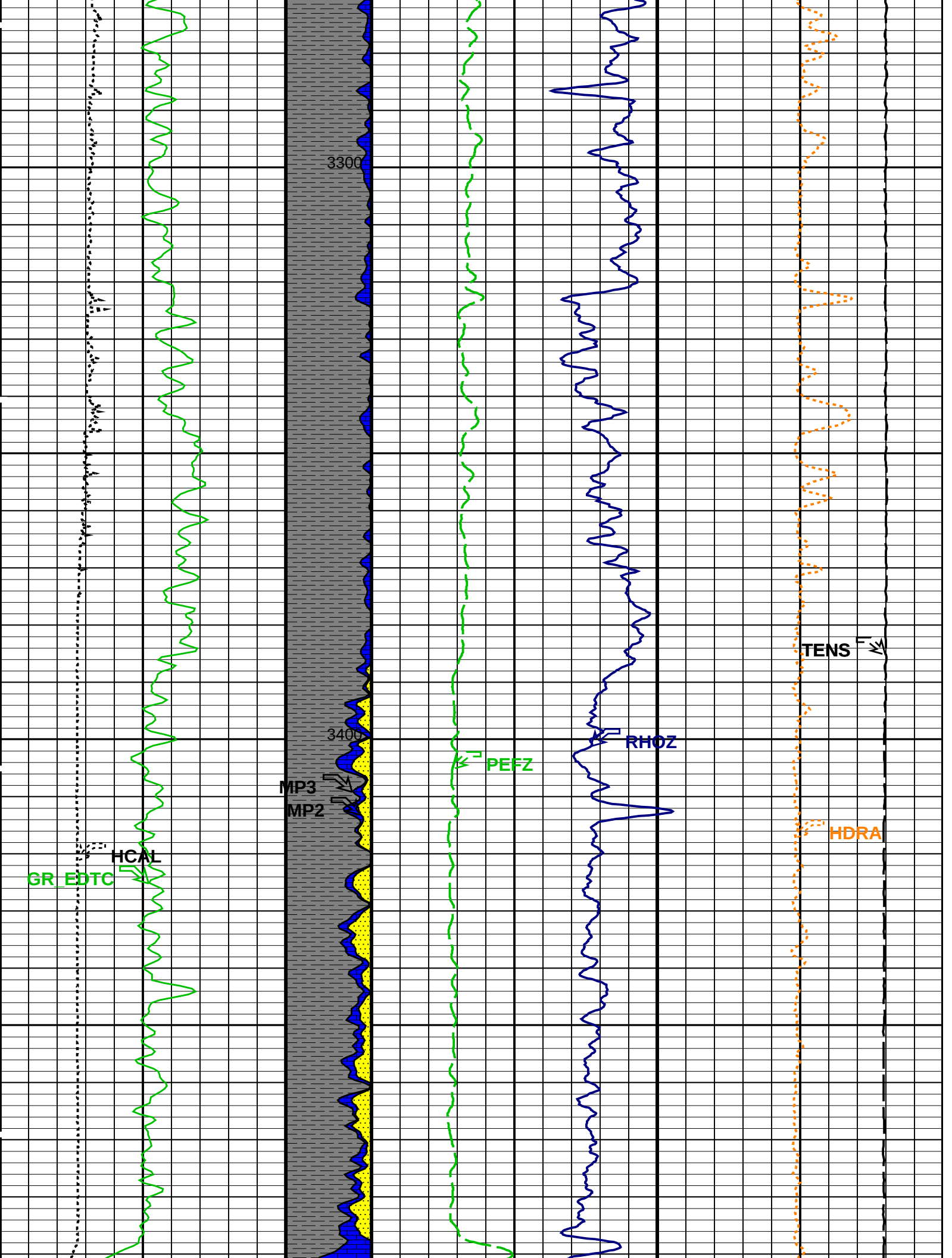

TENS
2200
RHOZ
PEFZ
MP3
MP2
HDRA
HCAL
GR_EDTC
2300

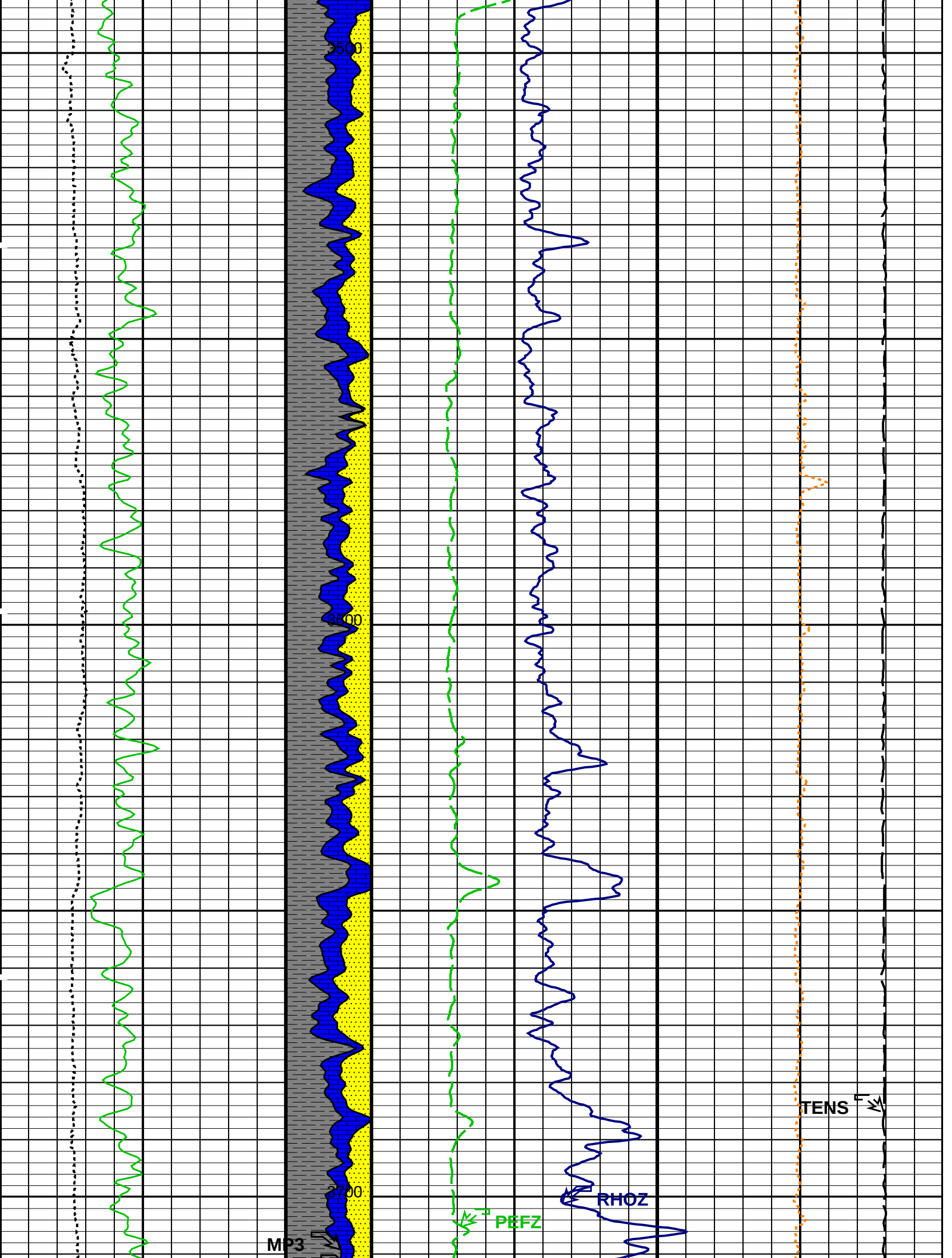

2400
2500
2600
MP3
MP2
HCAL
GR
EDTC
PEFZ
RHOZ
TENS
HDRA

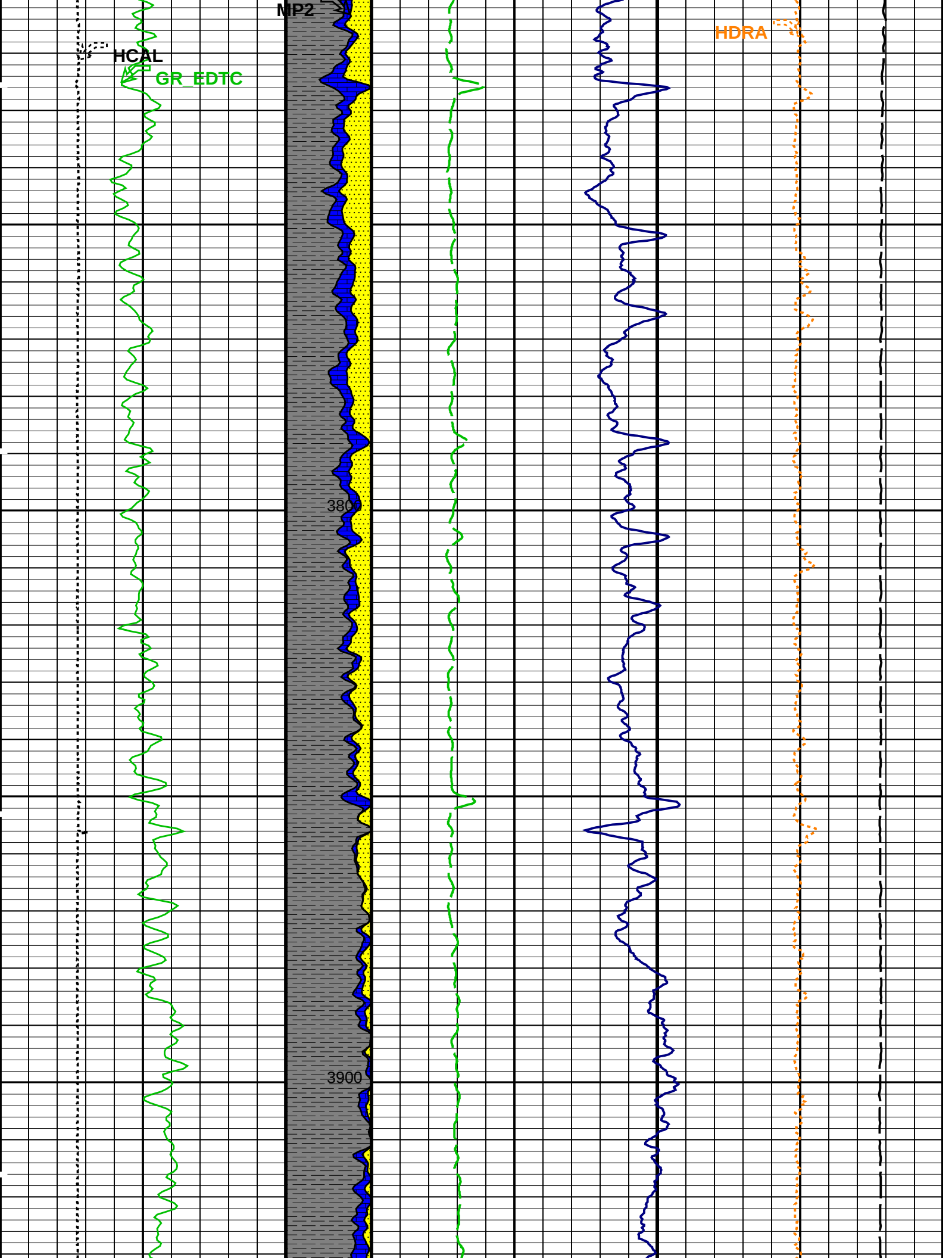

2700
2800
TENS
RHOZ
PEFZ
MP3
MP2
HDRA
HCAL
GR_EDTC

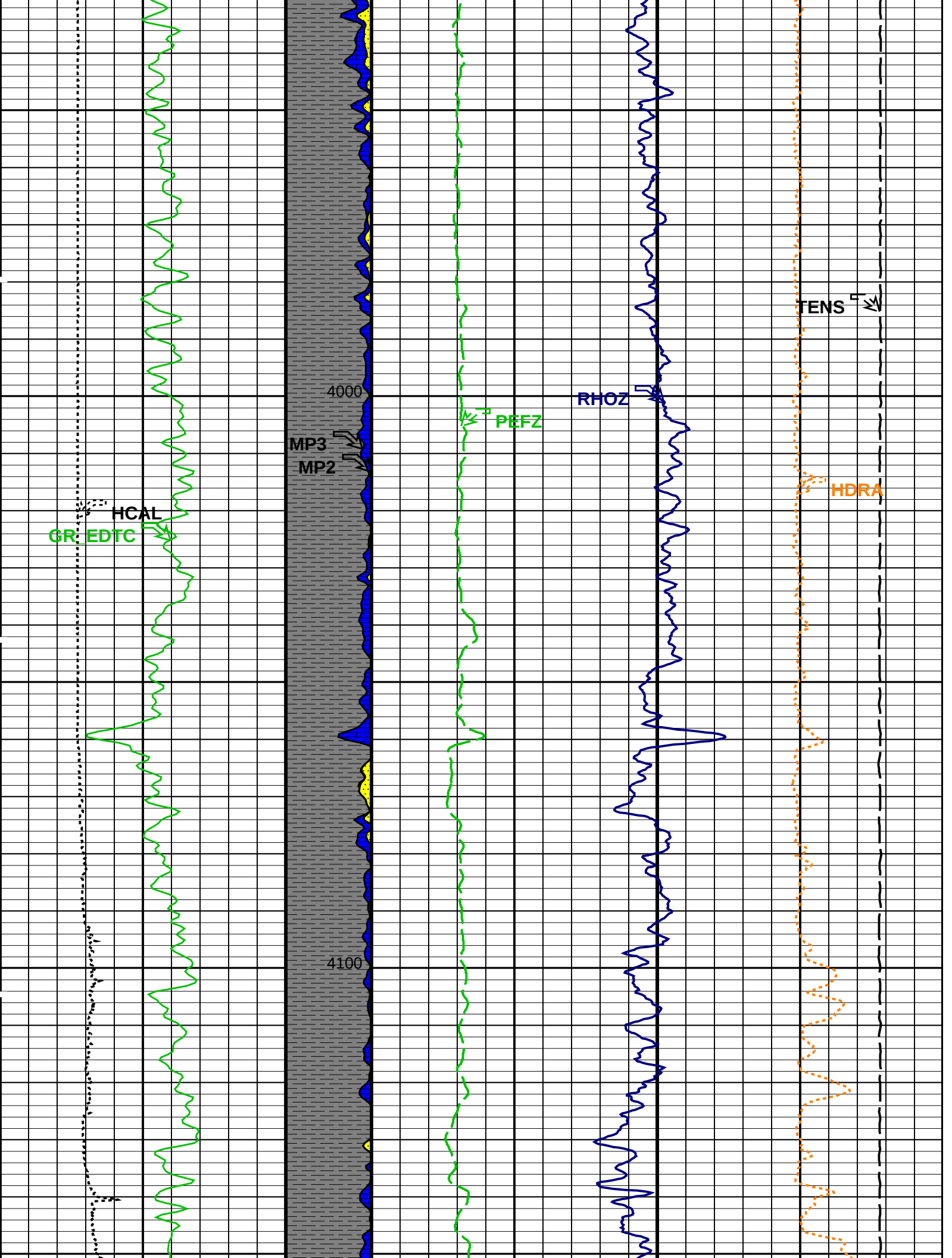

2900
3000

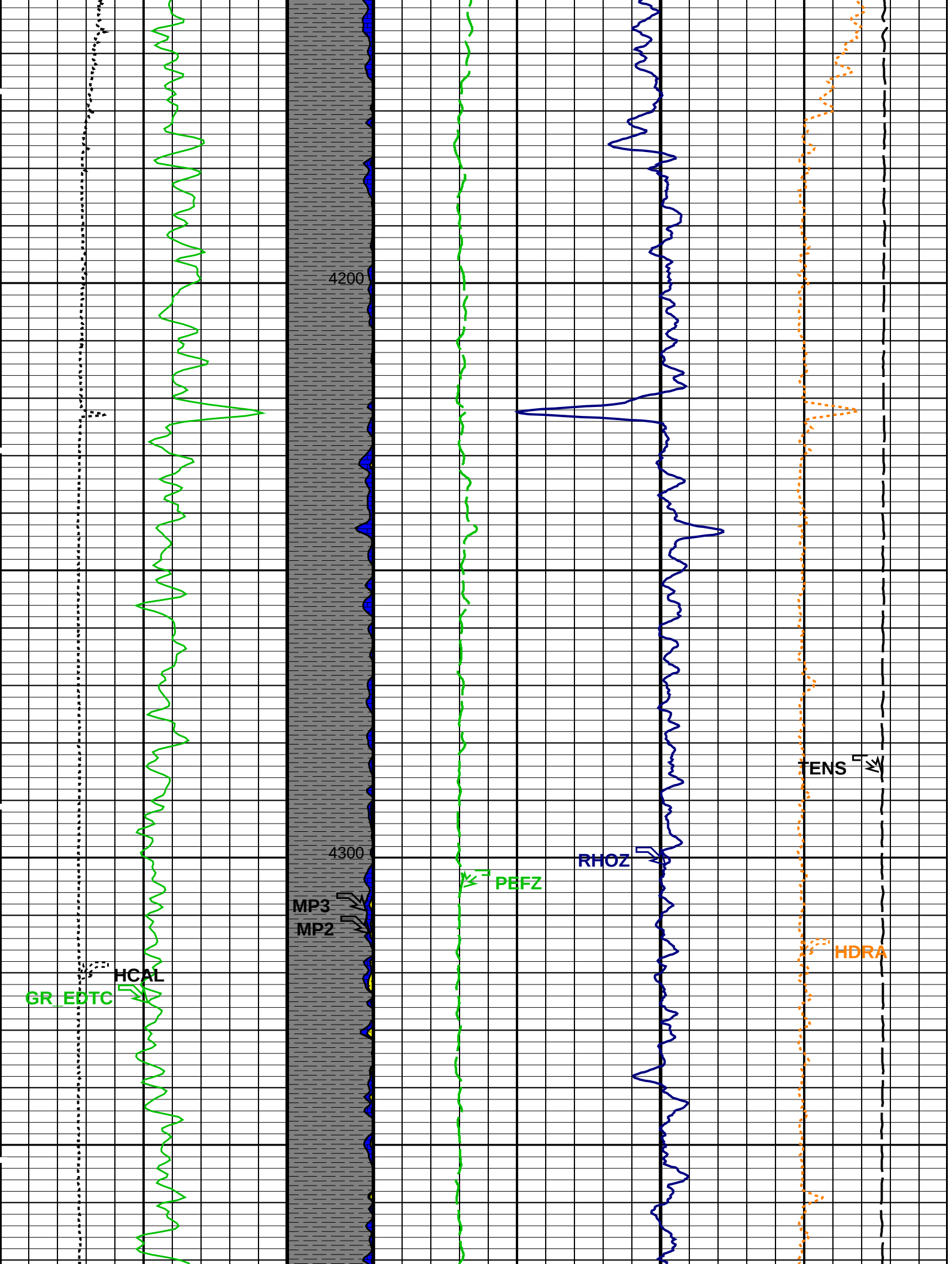

TENS
3100
RHOZ
PEFZ
MP3
MP2
HDRA
HCAL
GR_EDTC
3200

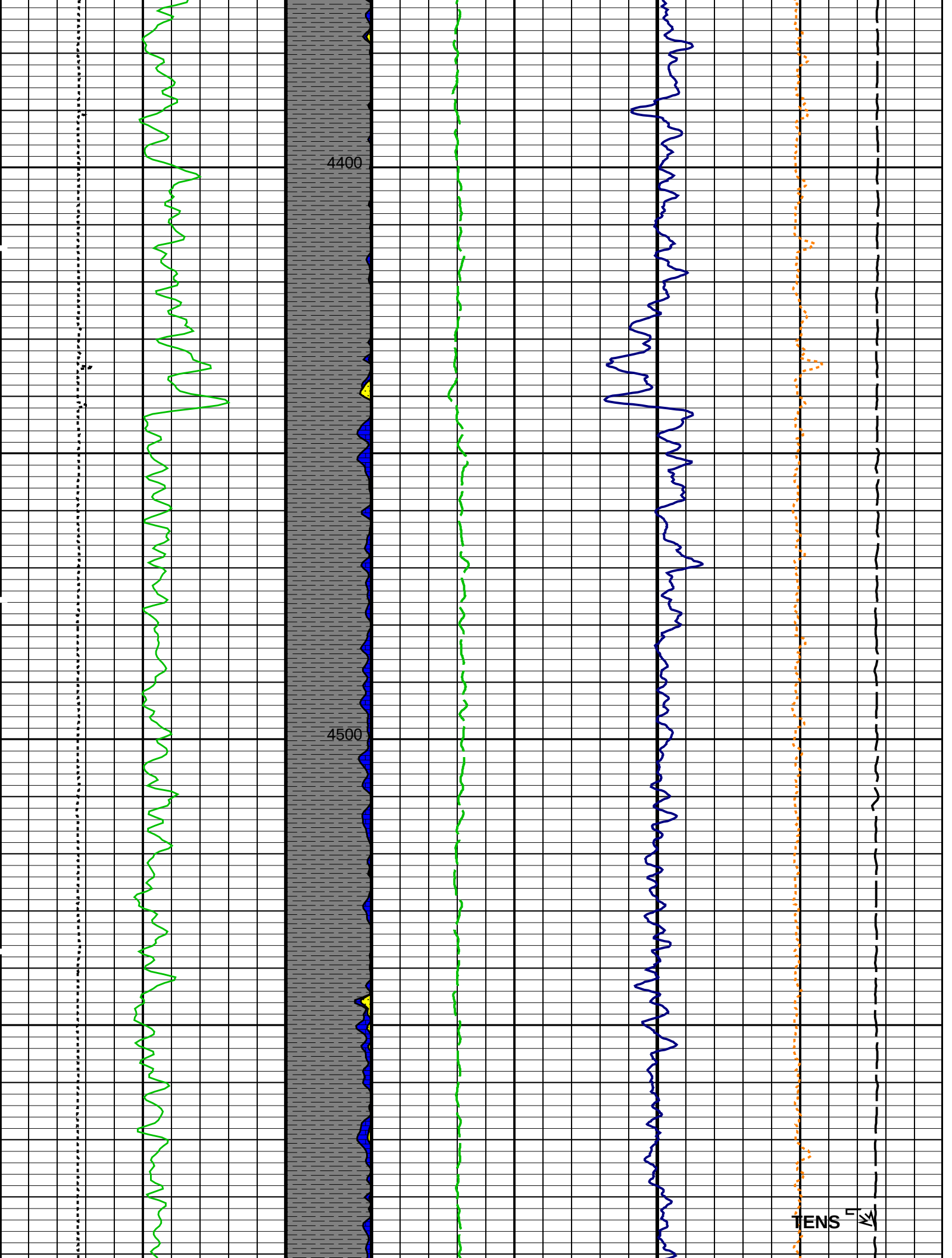

3300
3400
TENS
RHOZ
PEFZ
MP3
MP2
HDRA
HCAL
GR_EDTC

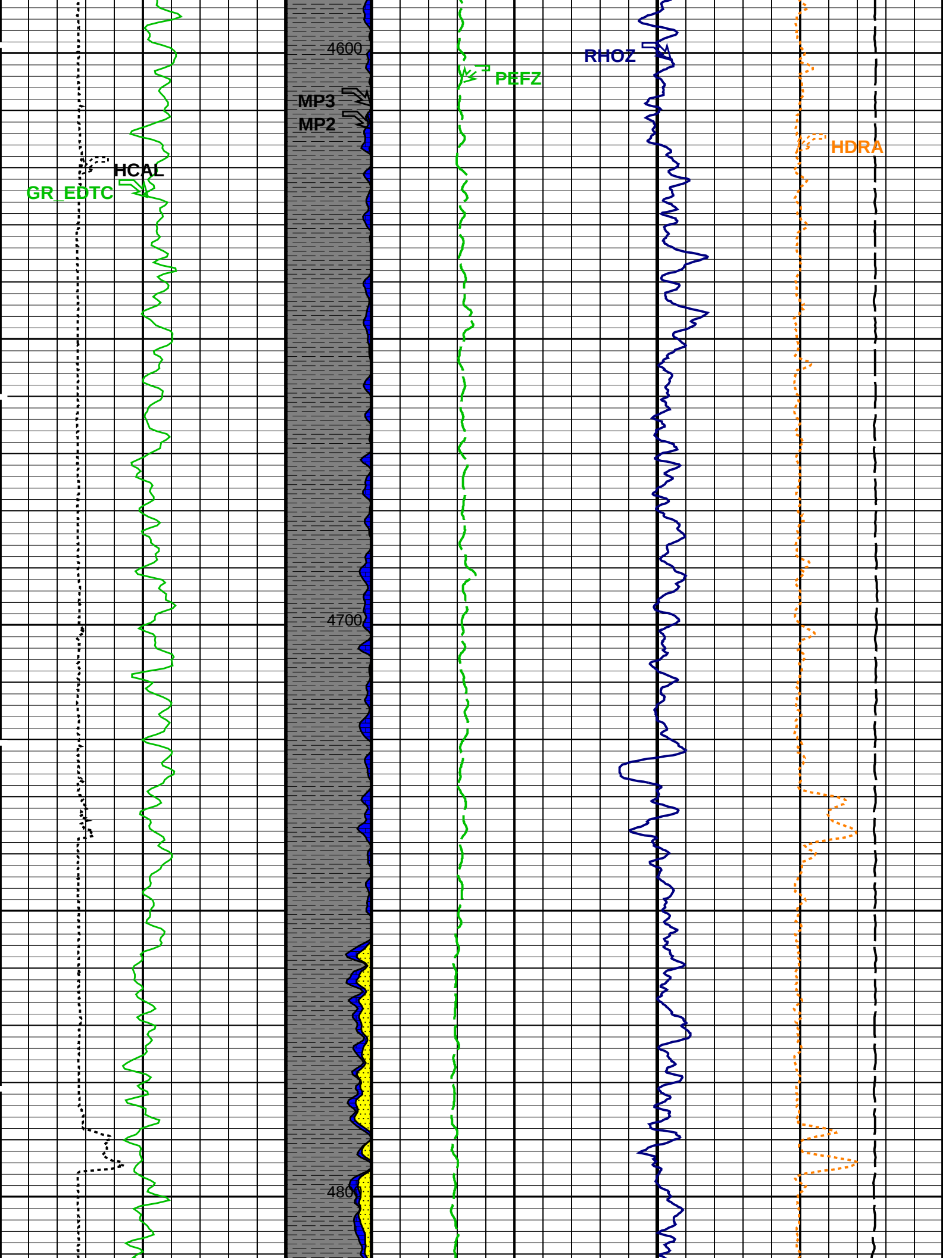

3500
3600
3700
MP3
PEFZ
RHOZ
TENS

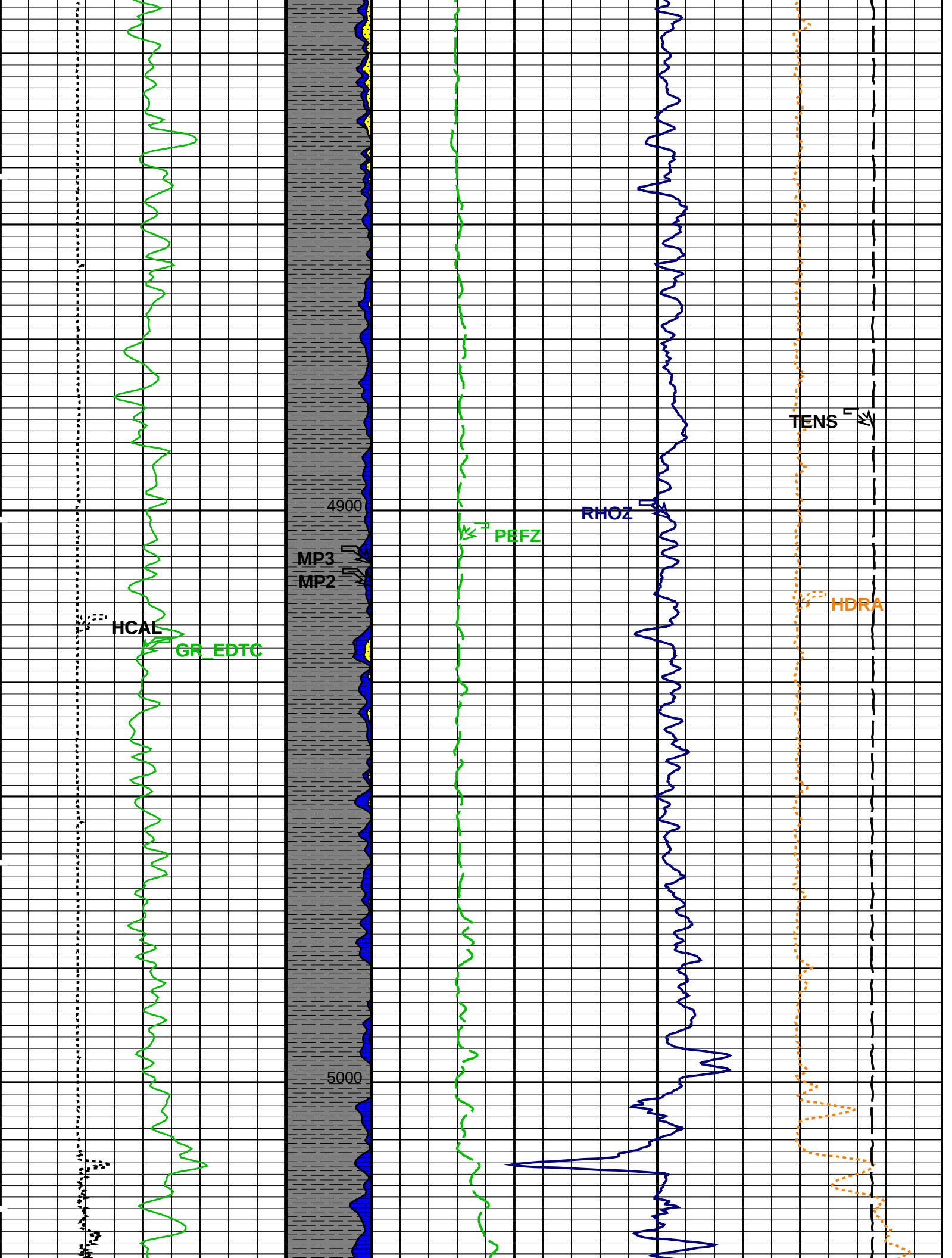

MP2
HCAL
GR_EDTC
HDRA
3800
3900

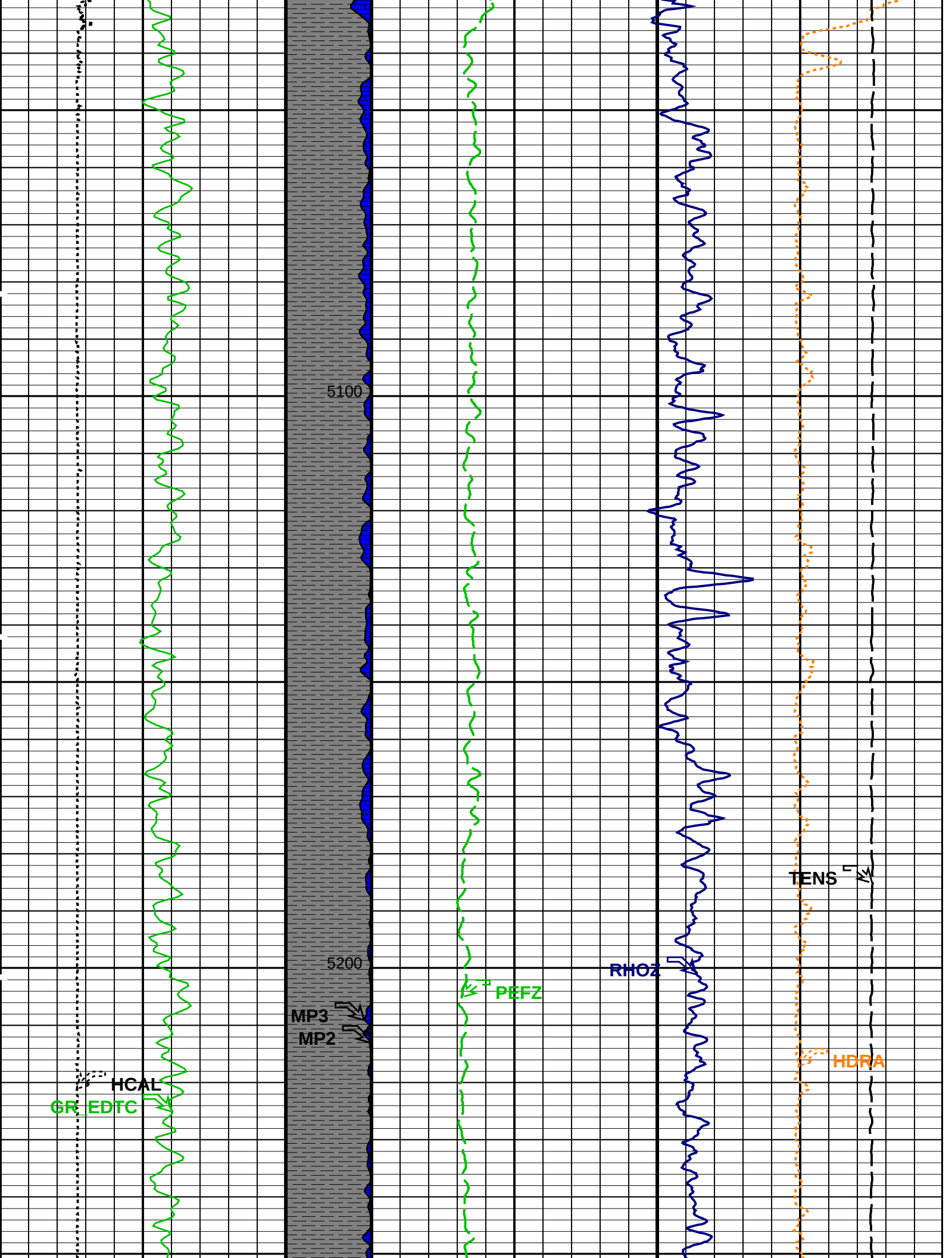

TENS
4000
RHOZ
PEFZ
MP3
MP2
HDRA
HCAL
GR_EDTC
4100

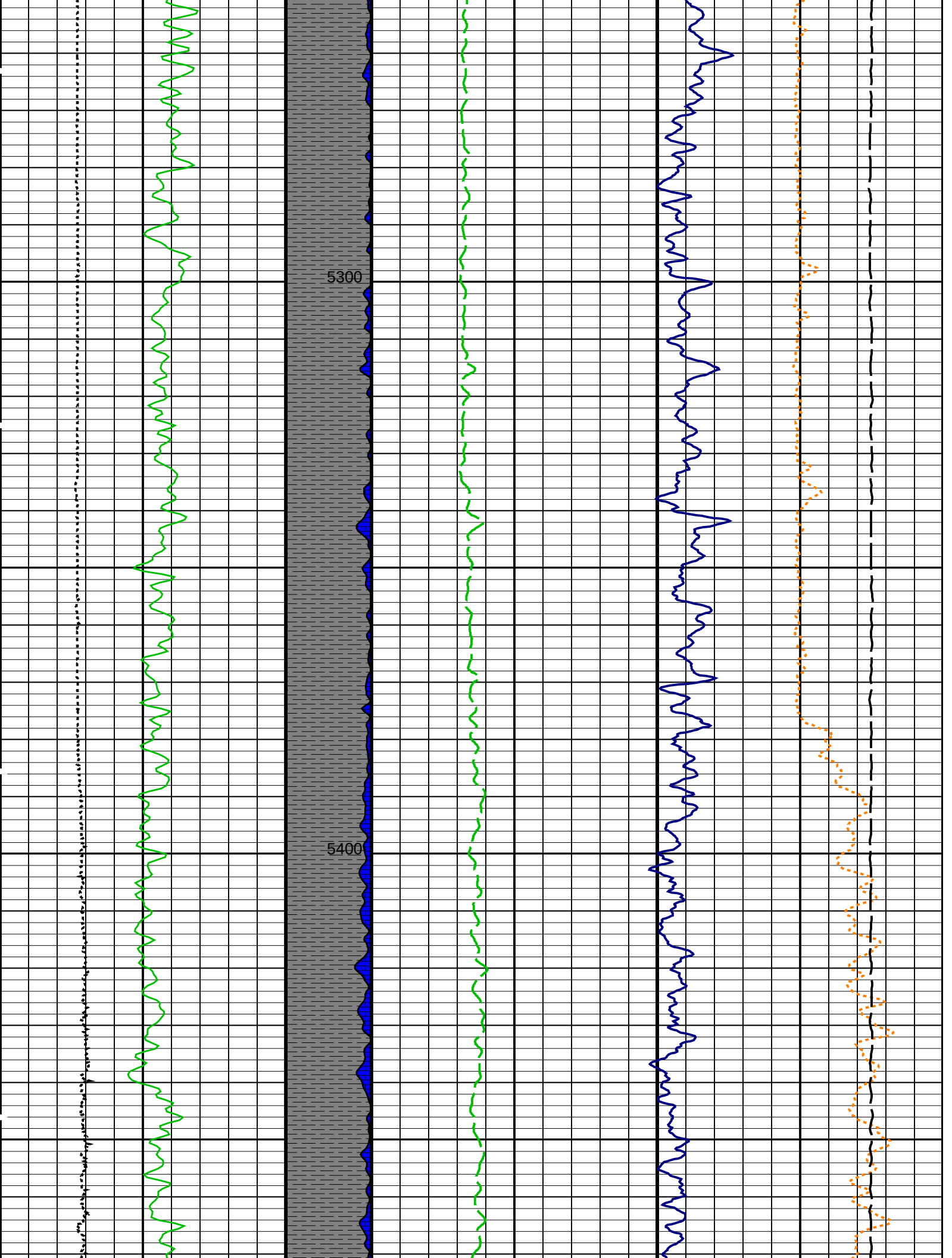

4200
4300
HCAL
GR_EDTC
MP3
MP2
PEFZ
RHOZ
TENS
HDRA

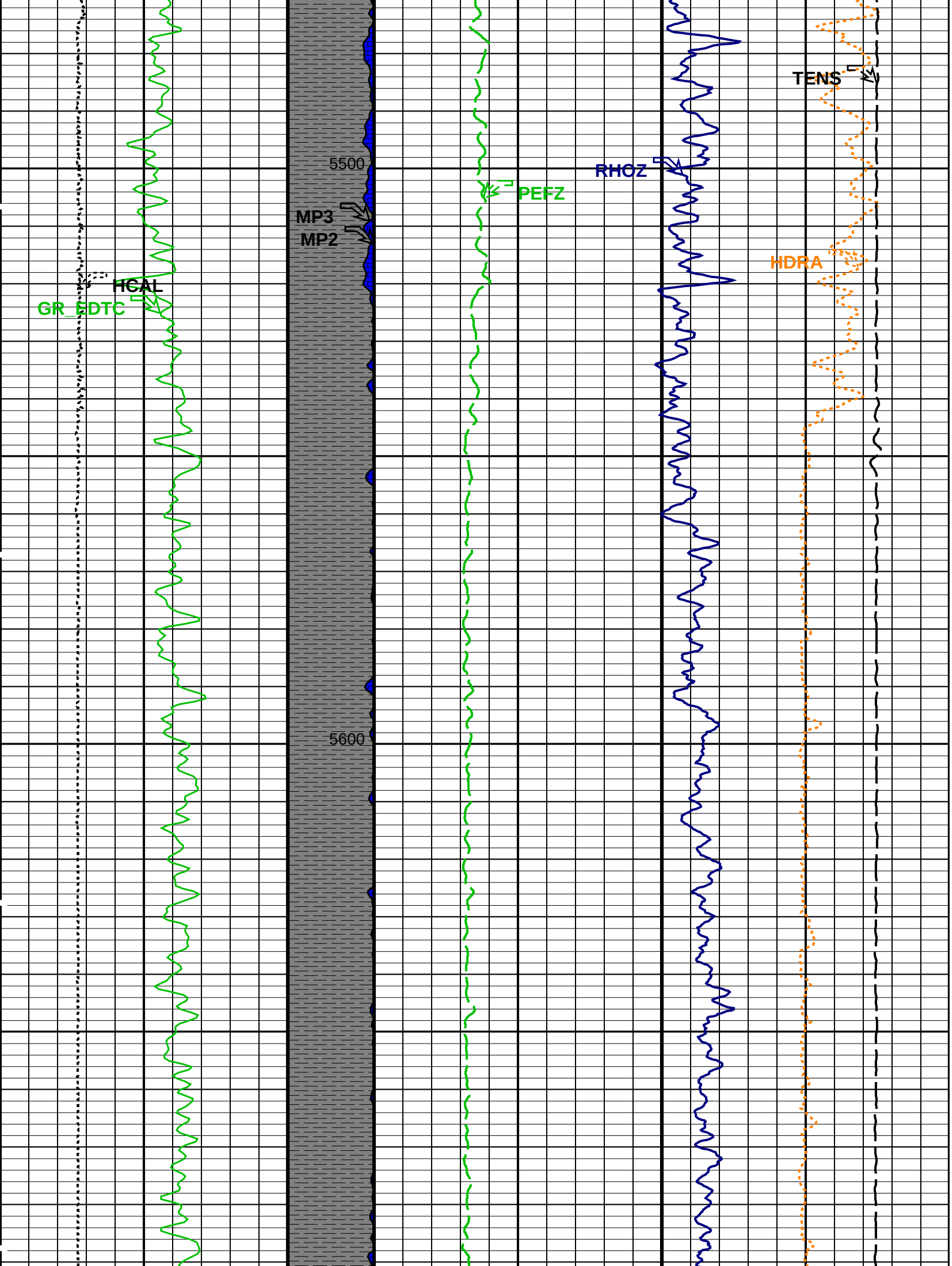

4400
4500
TENS

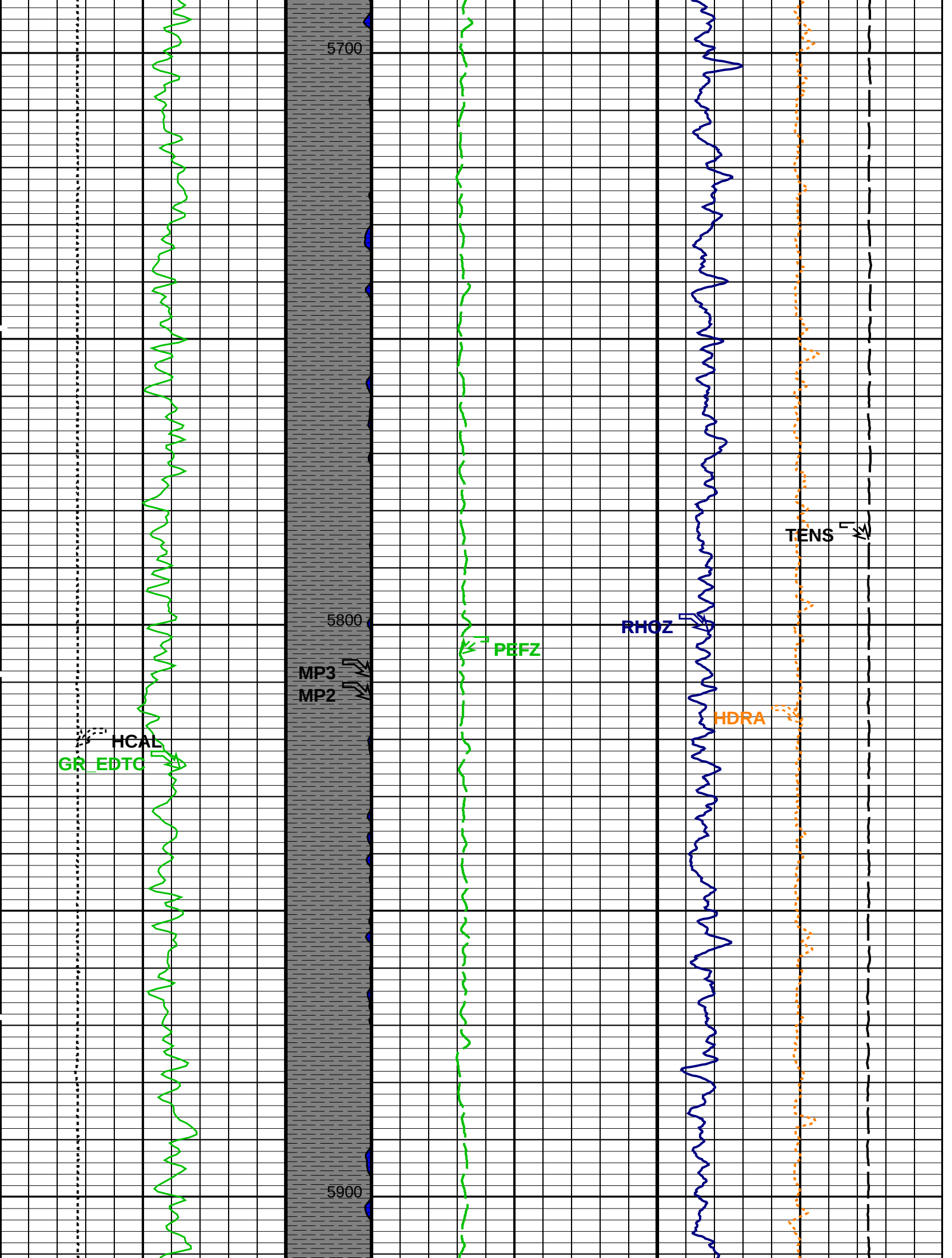

4600
MP3
MP2
HCAL
GR_EDTC
PEFZ
RHOZ
HDRA
4700
4800

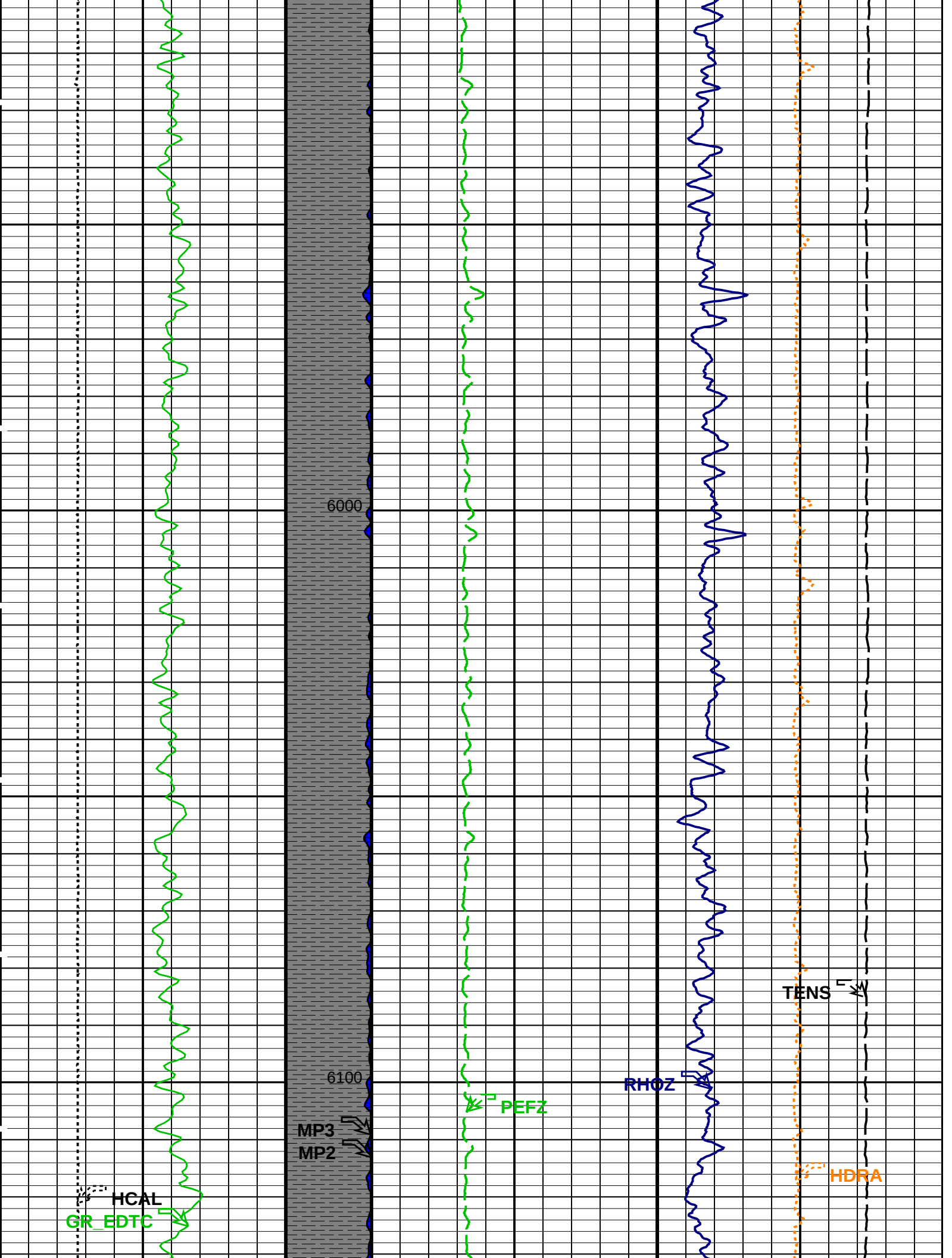

TENS
4900
RHOZ
PEFZ
MP3
MP2
HDRA
HCAL
GR_EDTC
5000

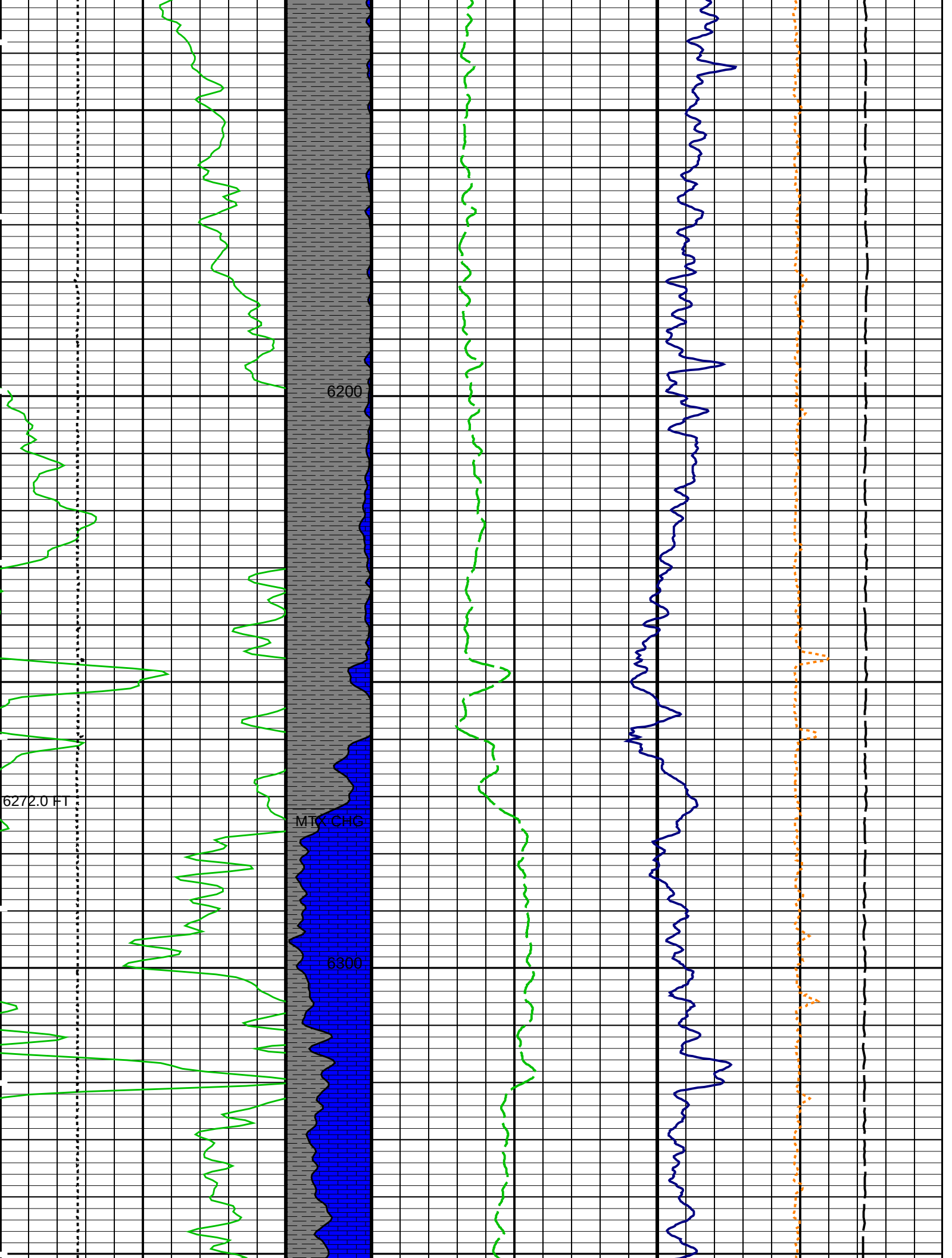

5100
5200
HCAL
GR
EDTC
MP3
MP2
PEFZ
RHOZ
TENS
HDRA

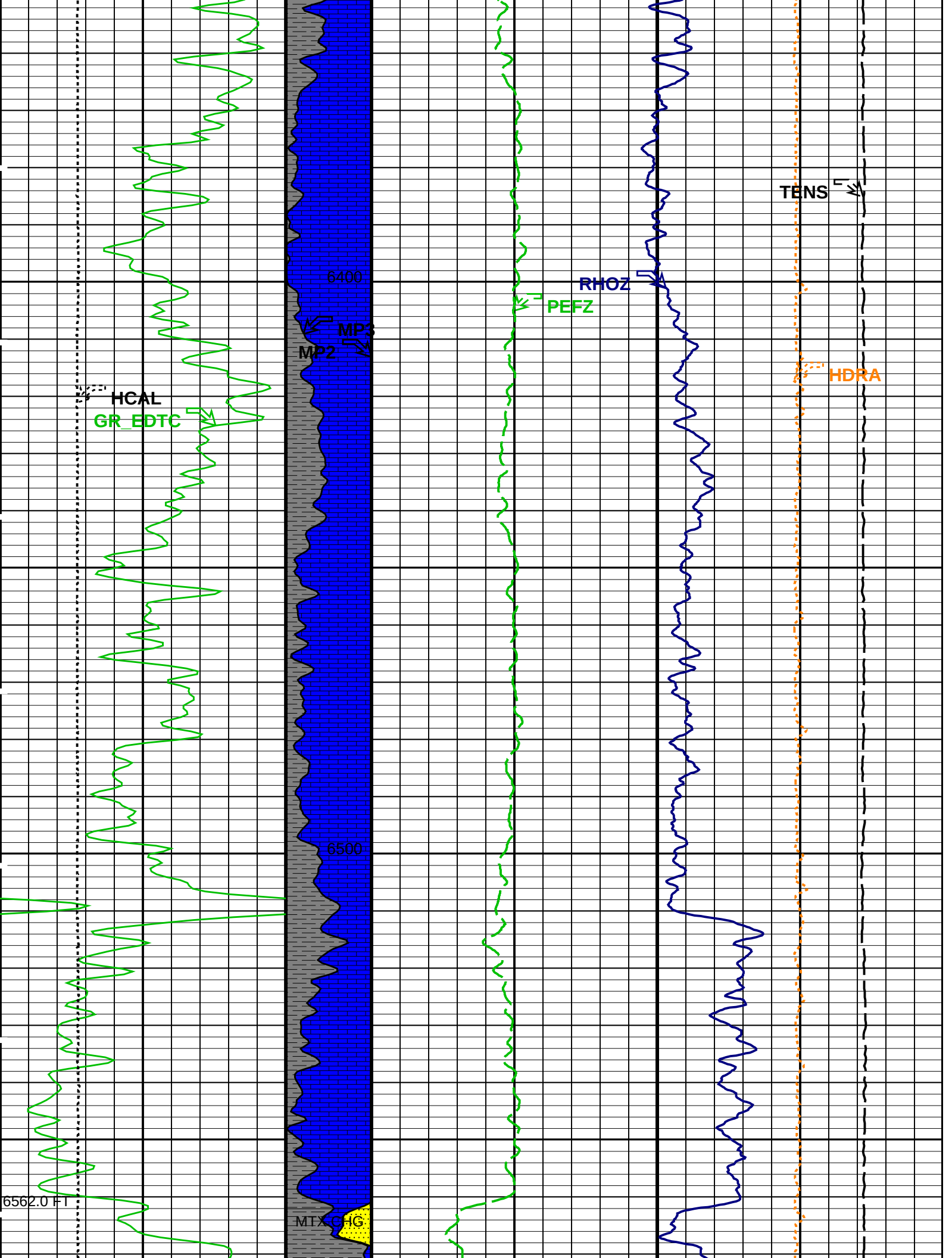

5300
5400

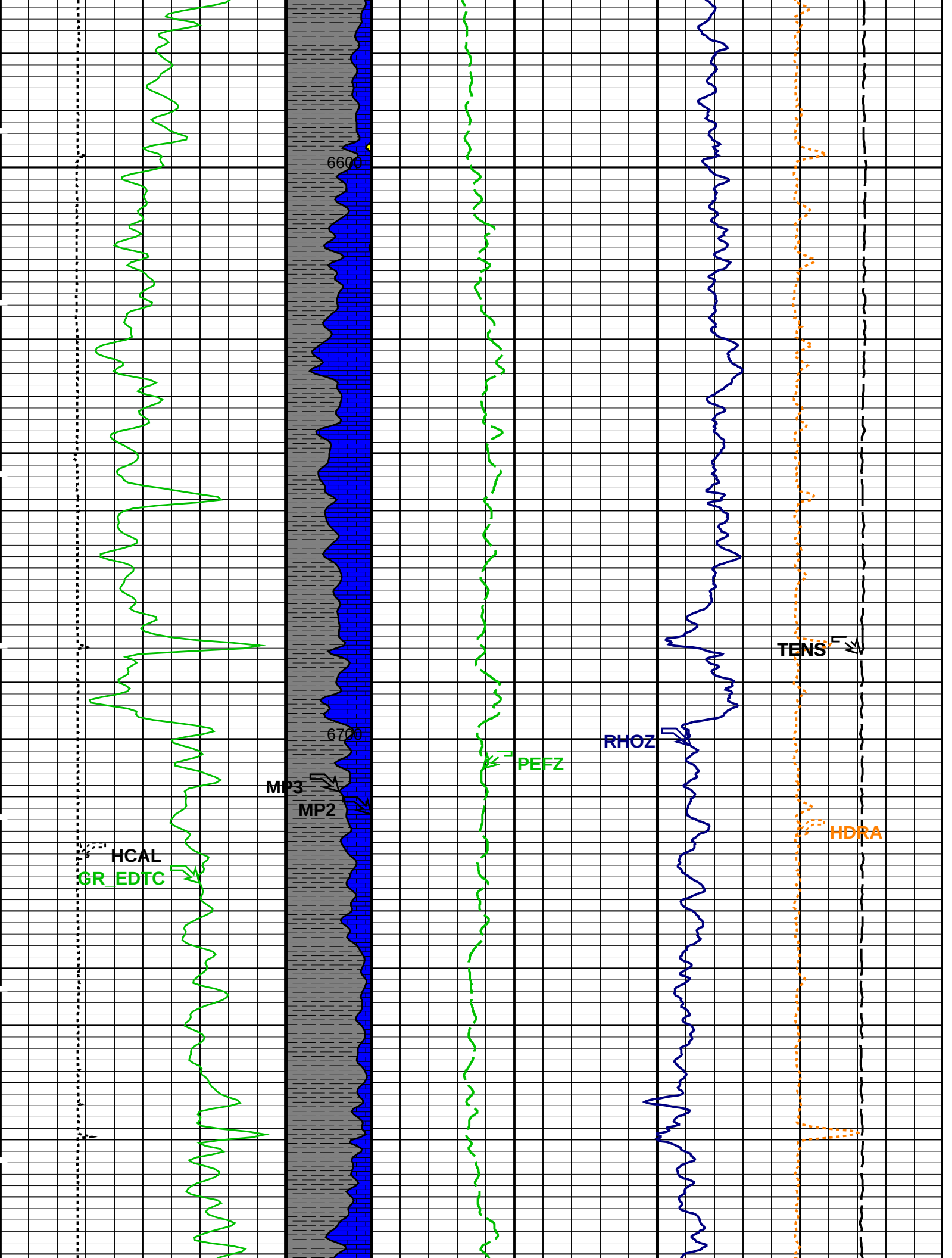

TENS
5500
RHOZ
PEFZ
MP3
MP2
HDRA
HCAL
GR_EDTC
5600

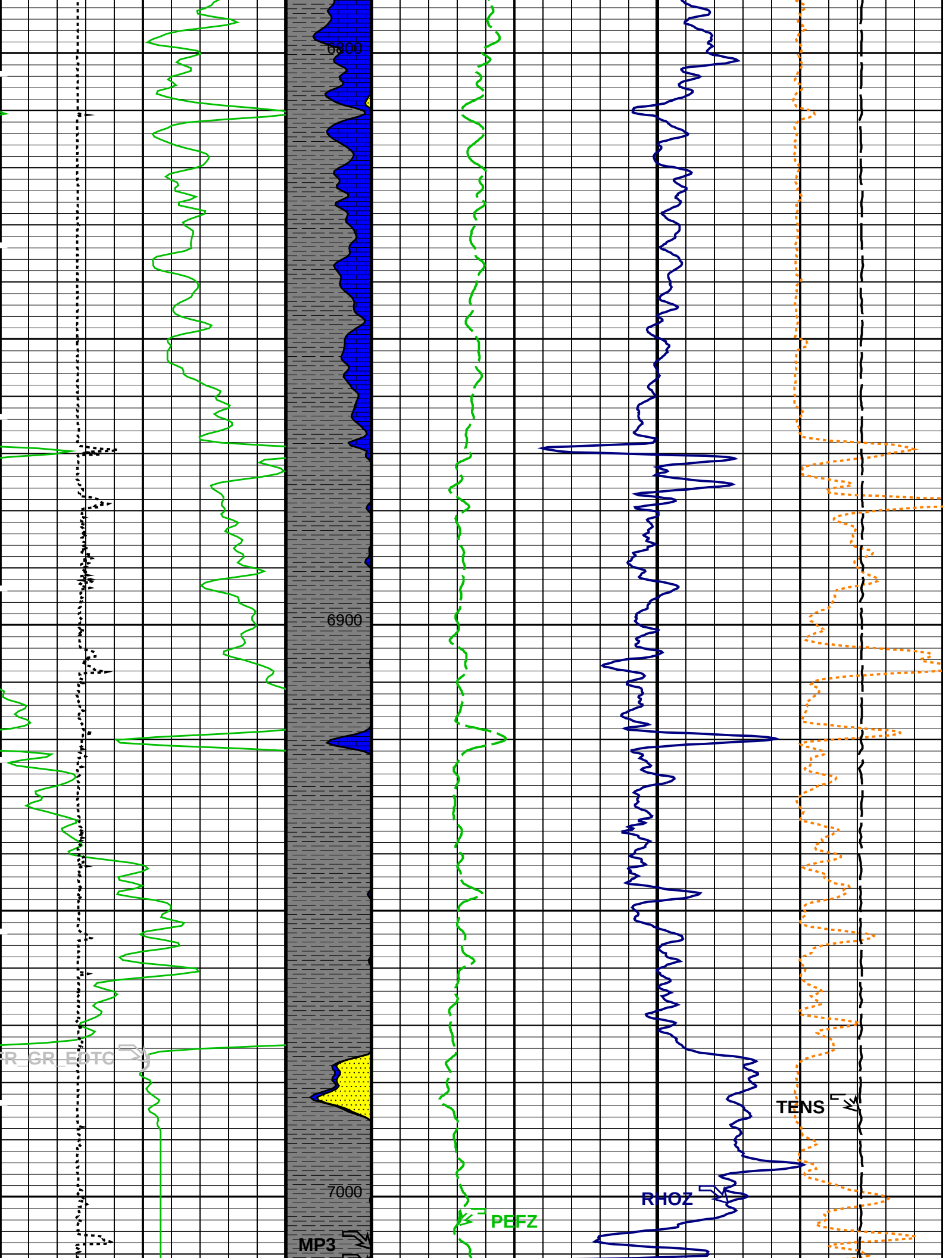

5700
5800
5900
TENS
RHOZ
PEFZ
MP3
MP2
HDRA
HCAL
GR_EDTC

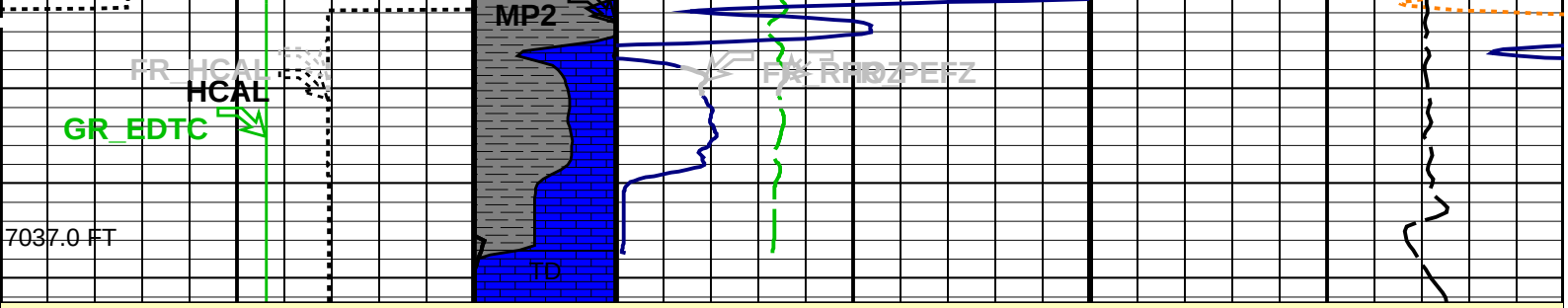

6000
6100
HCAL
GR_EDTC
MP3
MP2
PEFZ
RHOZ
TENS
HDRA


6200
6272.0 FT
MTX CHG
6300


TENS
6400
RHOZ
PEFZ
MP3
MP2
HDRA
HCAL
GR_EDTC
6500
6562.0 FT
MTX CHG


6600
6700
TENS
RHOZ
PEFZ
MP3
MP2
HDRA
HCAL
GR_EDTC


6800
6900
7000
R_GR_EDTC
MP3
PEFZ
RHOZ
TENS



MAIN PASS: *** PLATFORM EXPRESS − LITHOLOGY DENSITY ***

Gamma Ray (GR_EDTC)	Stuck Stretch (STIT)	Std. Res. Formation Pe (PEFZ)	Density Correction (HDRA)
0 (GAPI) 200	0 (F) 50	0 (−−−− 10	−0.25 (G/C3) 0.25
Caliper (HCAL)	LIME	Std. Res. Formation Density (RHOZ)	
6 (IN) 16		2 (G/C3) 3	
	SAND	Tension (TENS)	
		10000 (LBF) 0	
	SHALE		

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HILTB−FTB: High resolution Integrated Logging Tool−DTS		
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCLF	Germany Coal−like Formation Option	NO	
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
SHT	Surface Hole Temperature	68	DEGF
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	EDTC−B: Enhanced DTS Cartridge		
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	FEQL: Formation Evaluation Quick Look		
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
	HOLEV: Integrated Hole/Cement Volume		
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	PERT: Preliminary Evaluation − Real Time		
BDPS	Bulk Density Processing Selector	Standard	
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
CLIM	Caliper Limit for Bad Hole	999	IN
CNPS	Corrected Neutron Porosity Selector	NPHI	
DRUL	DRHO Upper Limit	999	G/C3
FCAL	Caliper Presence Flag	PRESENT	
FCGR	CGR Presence Flag	PRESENT	

FEXP	Form Factor Exponent	2	
FLDT	Bulk Density Presence Flag	PRESENT	
FNUM	Form Factor Numerator	1	
FSON	Sonic Presence Flag	ABSENT	
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
PMAX	PHI Maximum	0.5	CFCF
POUT	Porosity Output Lithology	SANDSTONE	
RG21	RHO Grain (2−Mineral Model, Min−1)	2.71	G/C3
RG22	RHO Grain (2−Mineral Model, Min−2)	2.644	G/C3
RG23	RHO Grain (2−Mineral Model, Min−3)	2.877	G/C3
RG31	RHO Grain (3−Mineral Model, Min−1)	2.71	G/C3
RG32	RHO Grain (3−Mineral Model, Min−2)	2.644	G/C3
RG33	RHO Grain (3−Mineral Model, Min−3)	2.877	G/C3
RTLF	RT Limit Flag	NO_LIMIT	
RWF	Resistivity of Free Water	0.02	OHMM
SHT	Surface Hole Temperature	68	DEGF
UF	U Fluid	0.398	
UM21	U Matrix (2−Mineral Model, Min−1)	13.77	
UM22	U Matrix (2−Mineral Model, Min−2)	4.779	
UM23	U Matrix (2−Mineral Model, Min−3)	8.997	
UM31	U Matrix (3−Mineral Model, Min−1)	13.77	
UM32	U Matrix (3−Mineral Model, Min−2)	4.779	
UM33	U Matrix (3−Mineral Model, Min−3)	8.997	
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth − Driller	7067.00	FT
TDL	Total Depth − Logger	7037.00	FT
	System and Miscellaneous		
BS	Bit Size	8.750	IN
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.0117	OHMM
TD	Total Depth	7037	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: DENS **Vertical Scale: 5" per 100’** **Graphics File Created: 22−Nov−2011 14:05**

OP System Version: 18C0−147

HILTB−FTB	18C0−147	ECS−HP	18C0−147
ECC−B	18C0−147	HNGC−B	18C0−147
HNGS−BA	18C0−147	EDTC−B	18C0−147

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22−Nov−2011 13:19	7042.5 FT	1309.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_004PUP	FN:3	PRODUCER	22−Nov−2011 14:04

Schlumberger

HIRES LOG 10" = 100’

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22−Nov−2011 13:19	7042.5 FT	1309.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_004PUP	FN:3	PRODUCER	22−Nov−2011 14:04

OP System Version: 18C0−147

HILTB−FTB	18C0−147	ECS−HP	18C0−147
ECC−B	18C0−147	HNGC−B	18C0−147
HNGS−BA	18C0−147	EDTC−B	18C0−147

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE LIMESTONE SANDSTONE	SANDSTONE SANDSTONE LIMESTONE	7042.5 14:05:30 6562.0 14:05:45 6272.0 14:05:54

PIP SUMMARY

Time Mark Every 60 S

SHALE
SAND
LIME

Tension (TENS)
10000 (LBF) 0

Caliper (HCAL)
6 (IN) 16

H. Res. Formation Density (RHO8)
2 (G/C3) 3

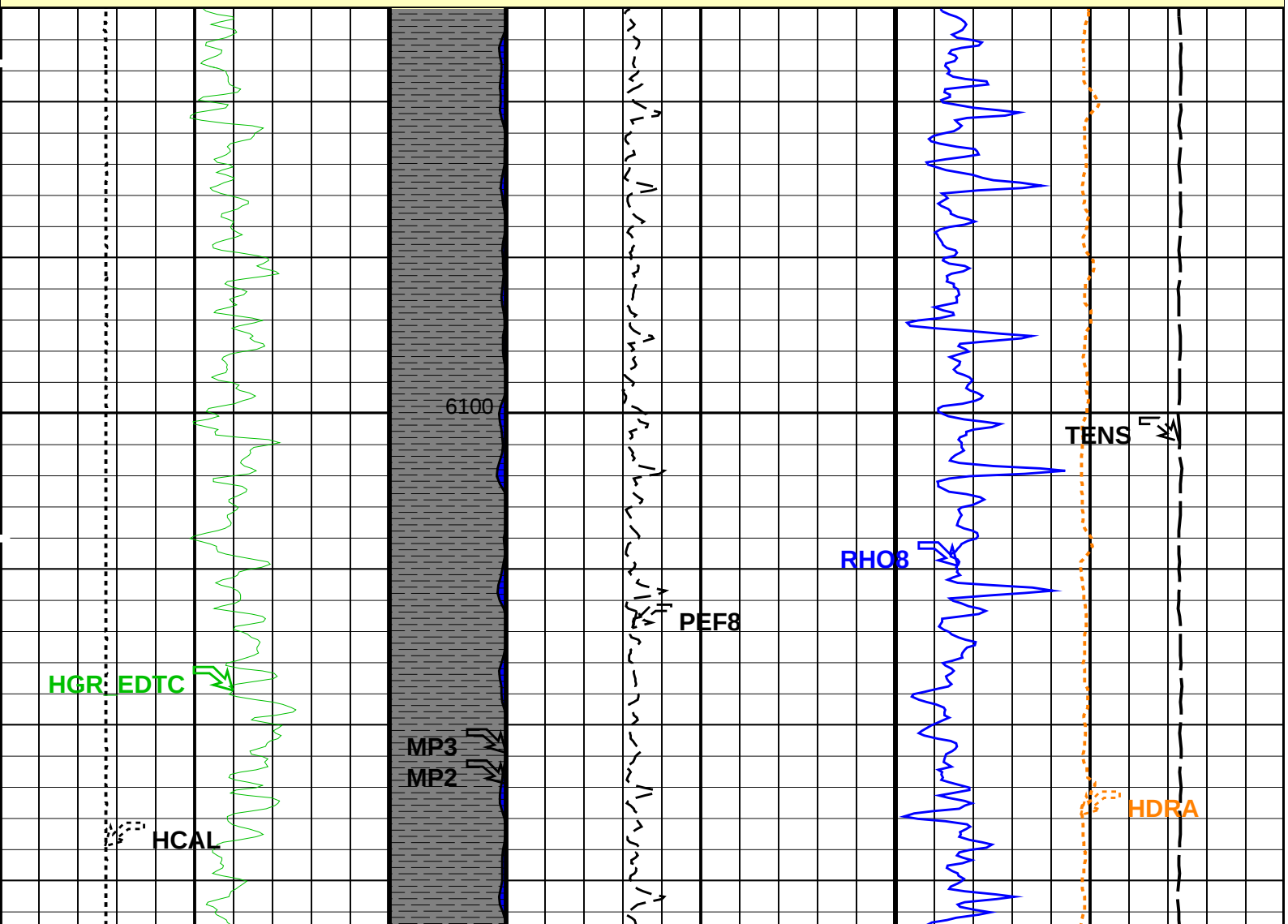
HiRes GammaRay (HGR_EDTC)
0 (GAPI) 200

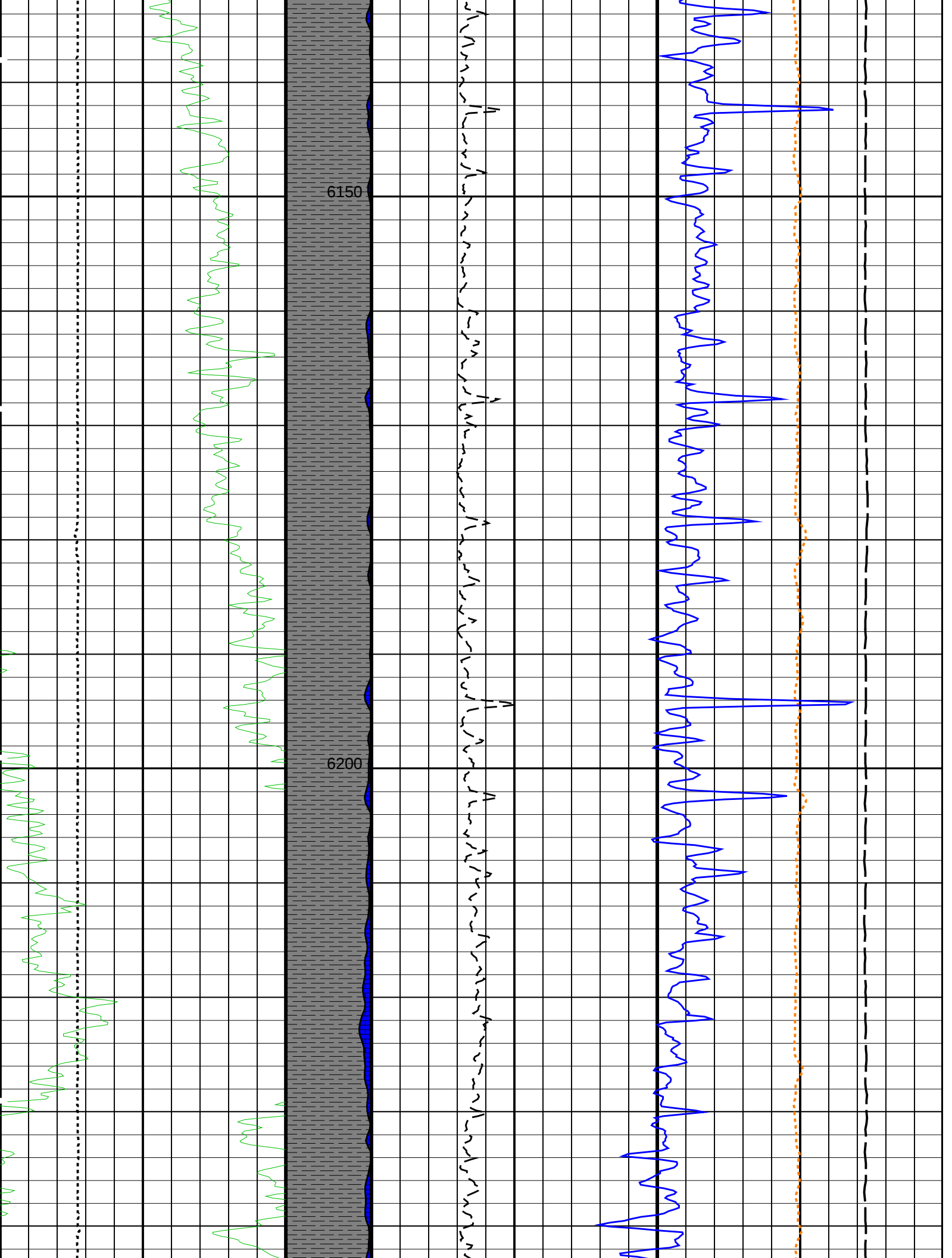
Stuck Stretch (STIT)
0 (F) 50

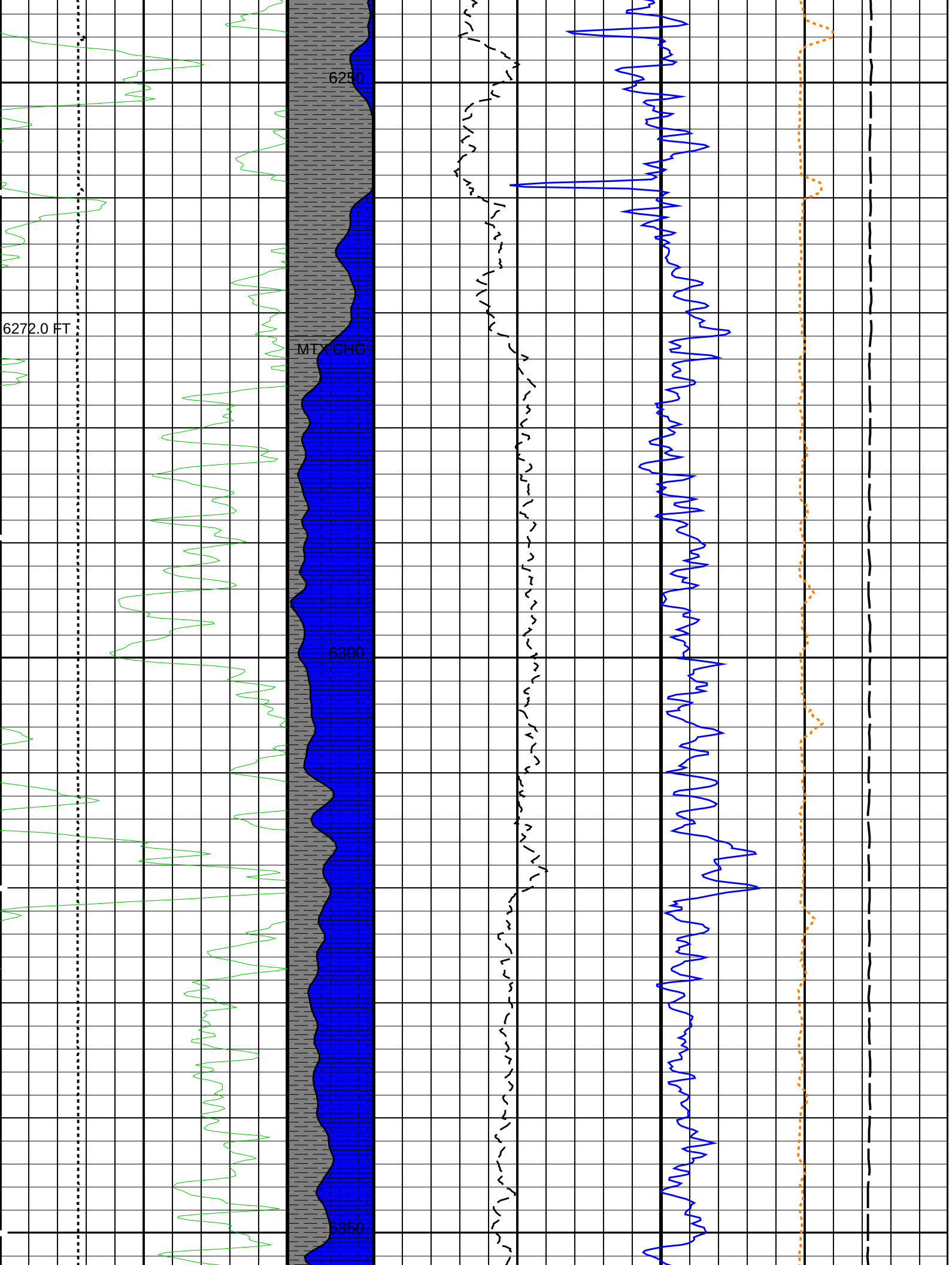
H. Res. Formation Pe (PEF8)
0 (−−−− 10

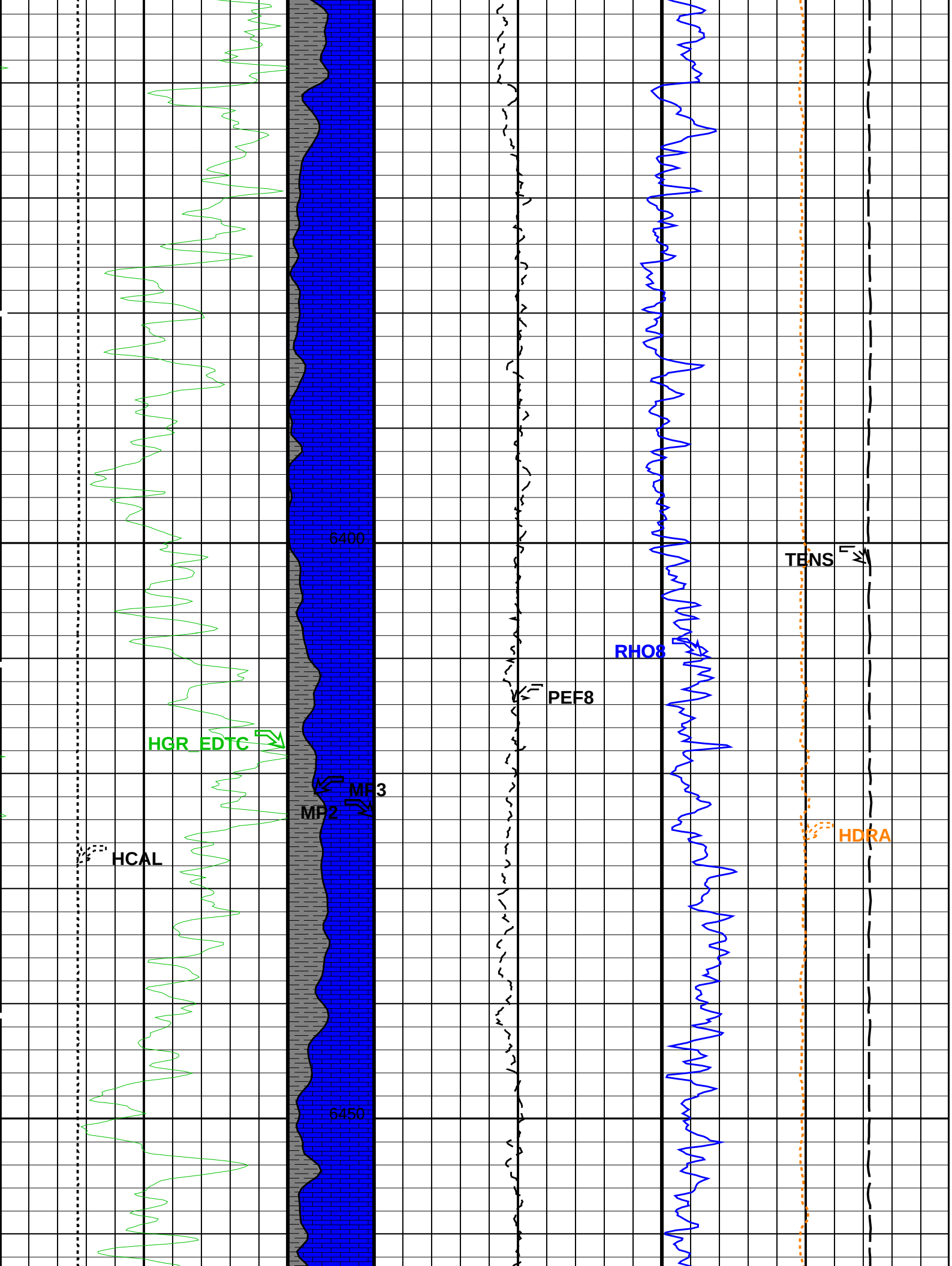
Density Correction (HDRA)
−0.25 (G/C3) 0.25

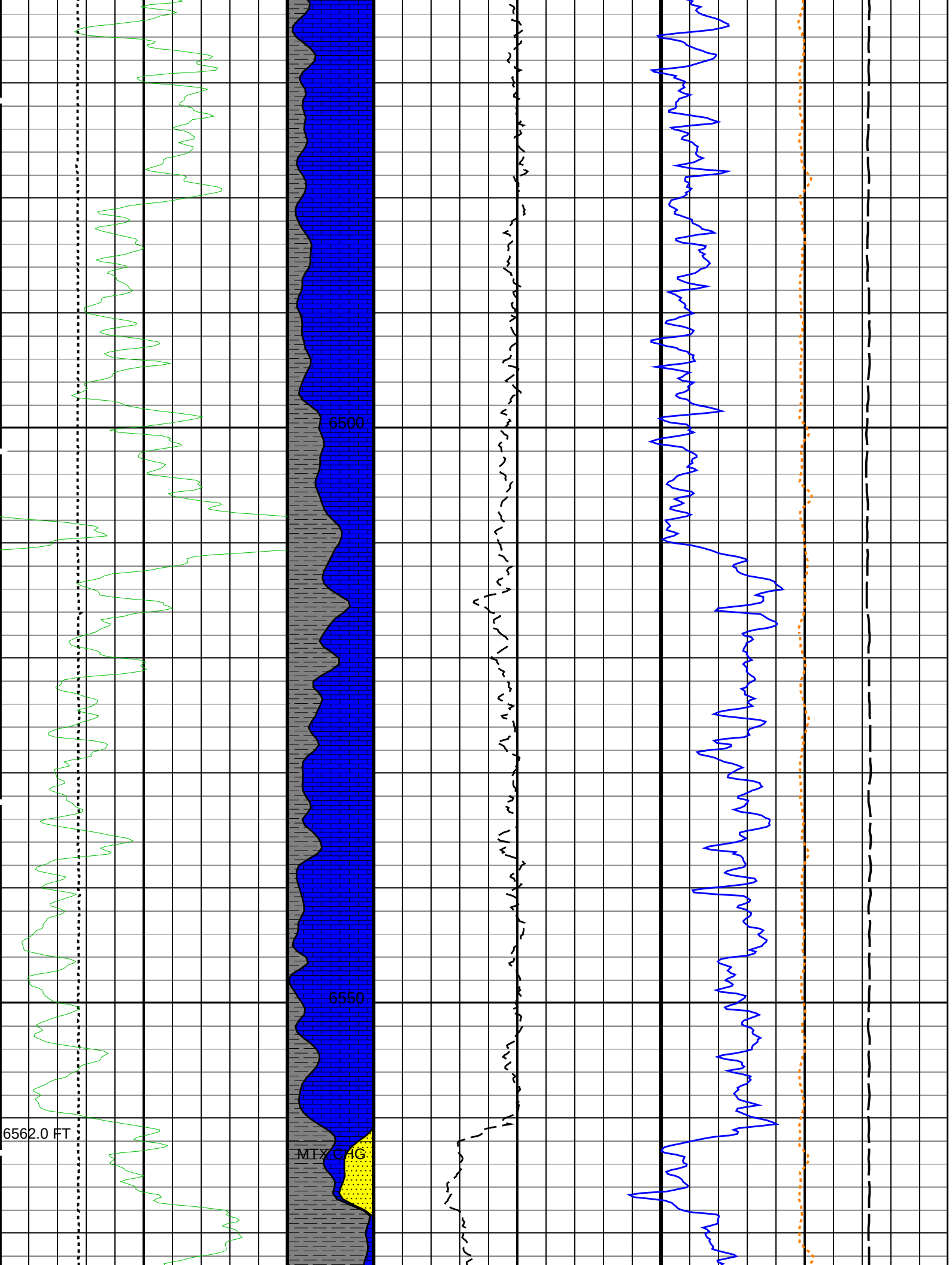
MAIN PASS: *** PLATFORM EXPRESS − LITHOLOGY DENSITY ***

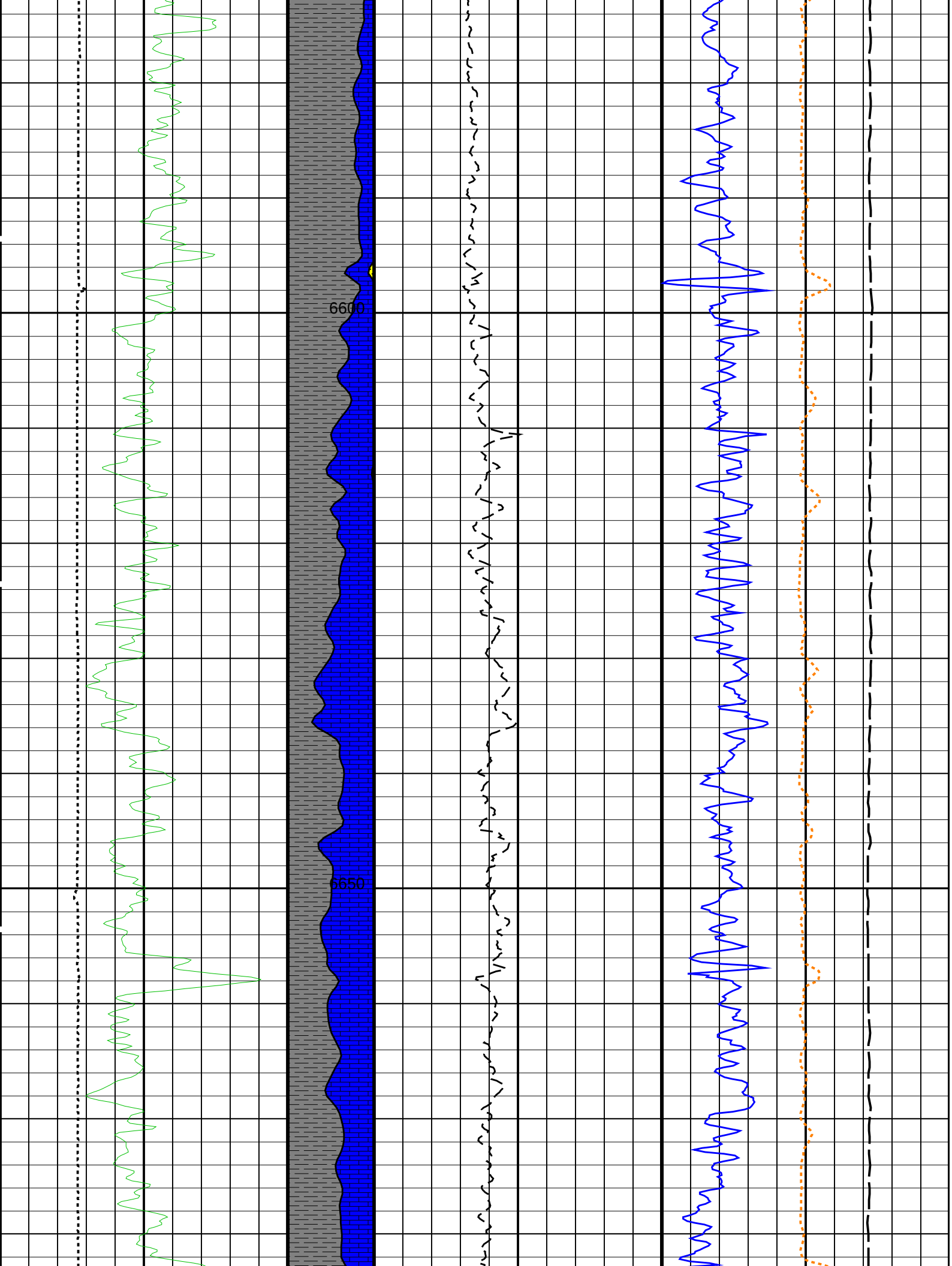


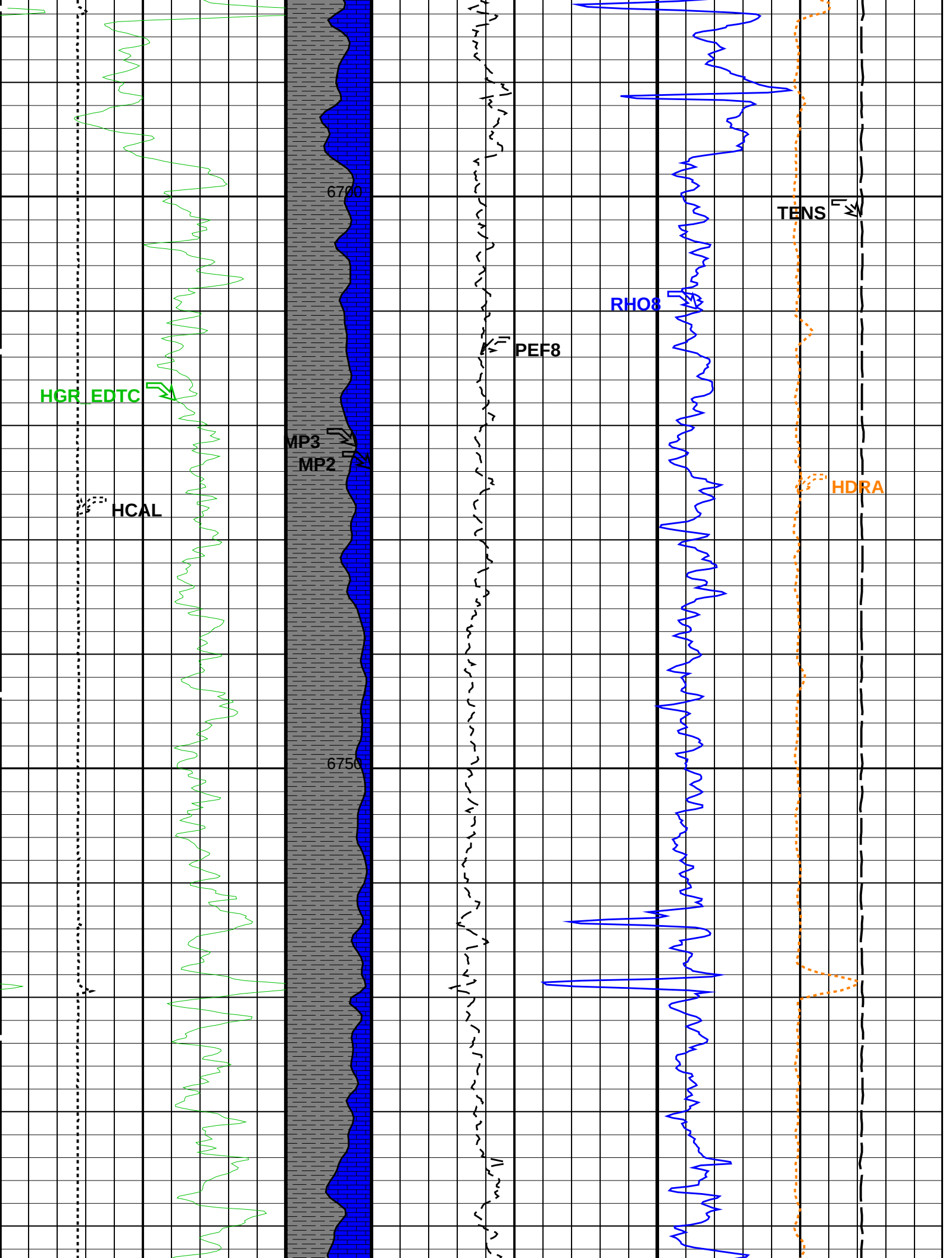

6150
6200

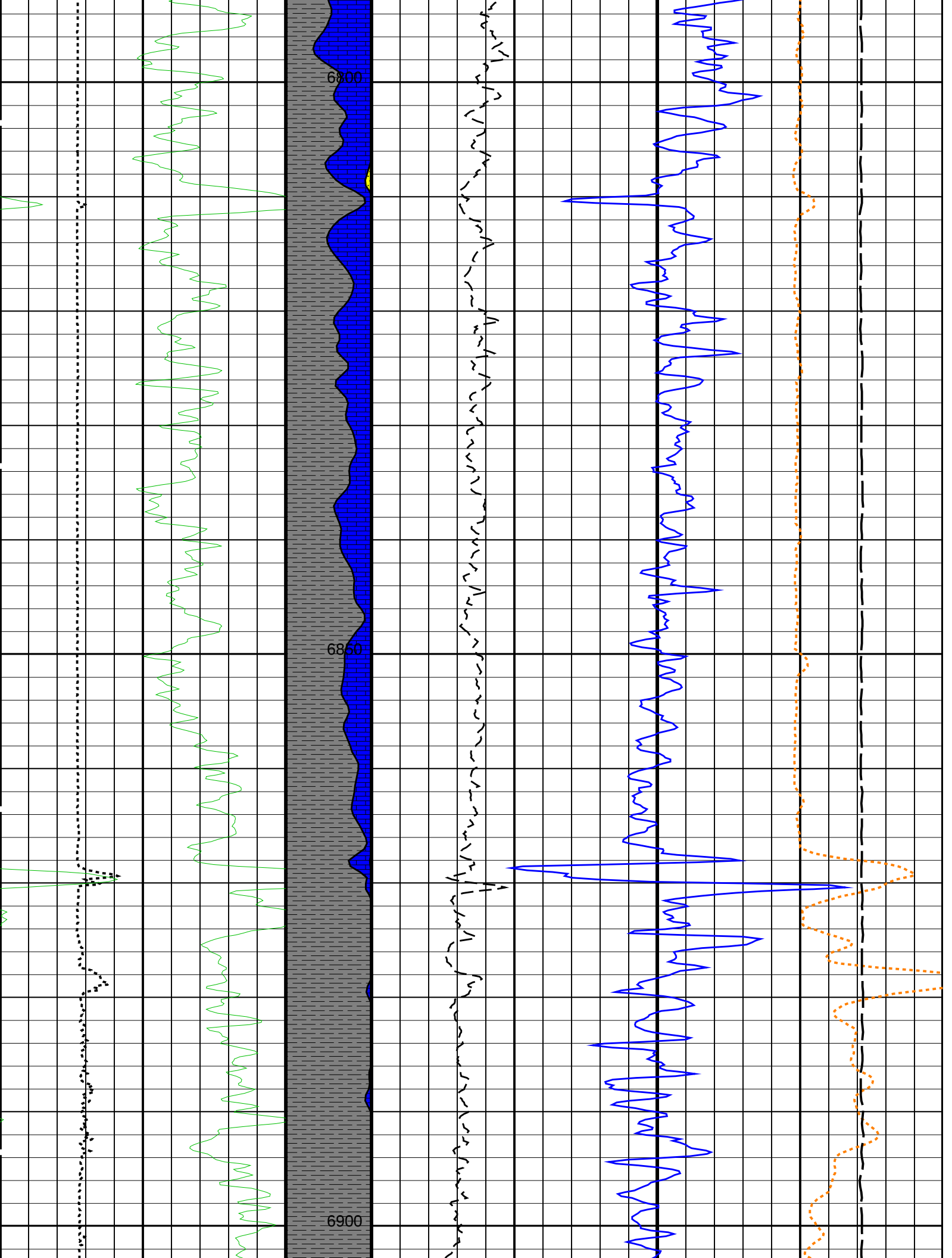

6250
6272.0 FT
MTY CHG
6300
6350

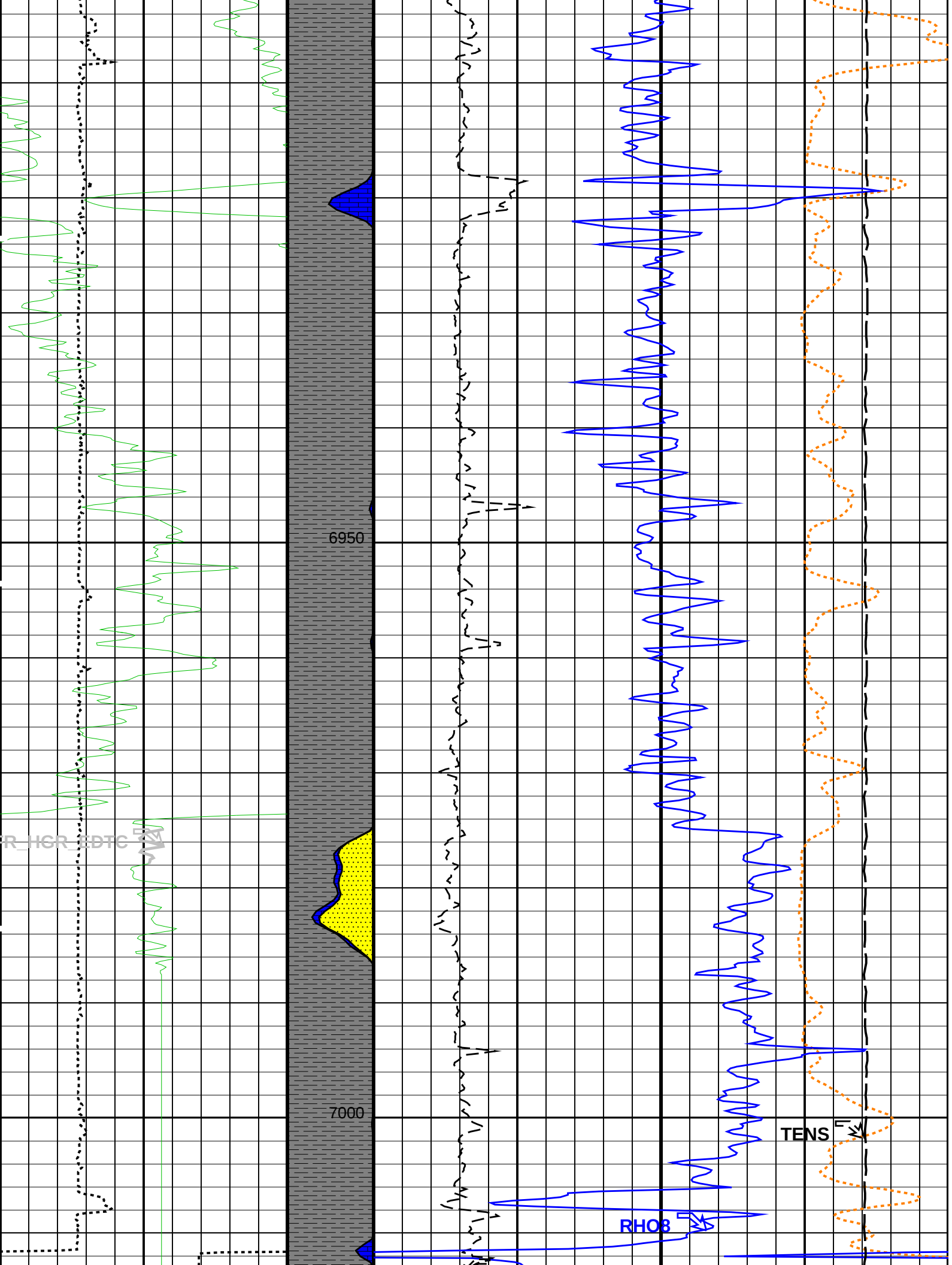

6400
6450
TENS
RHO8
PEF8
HGR_EDTC
MP3
MP2
HDRA
HCAL

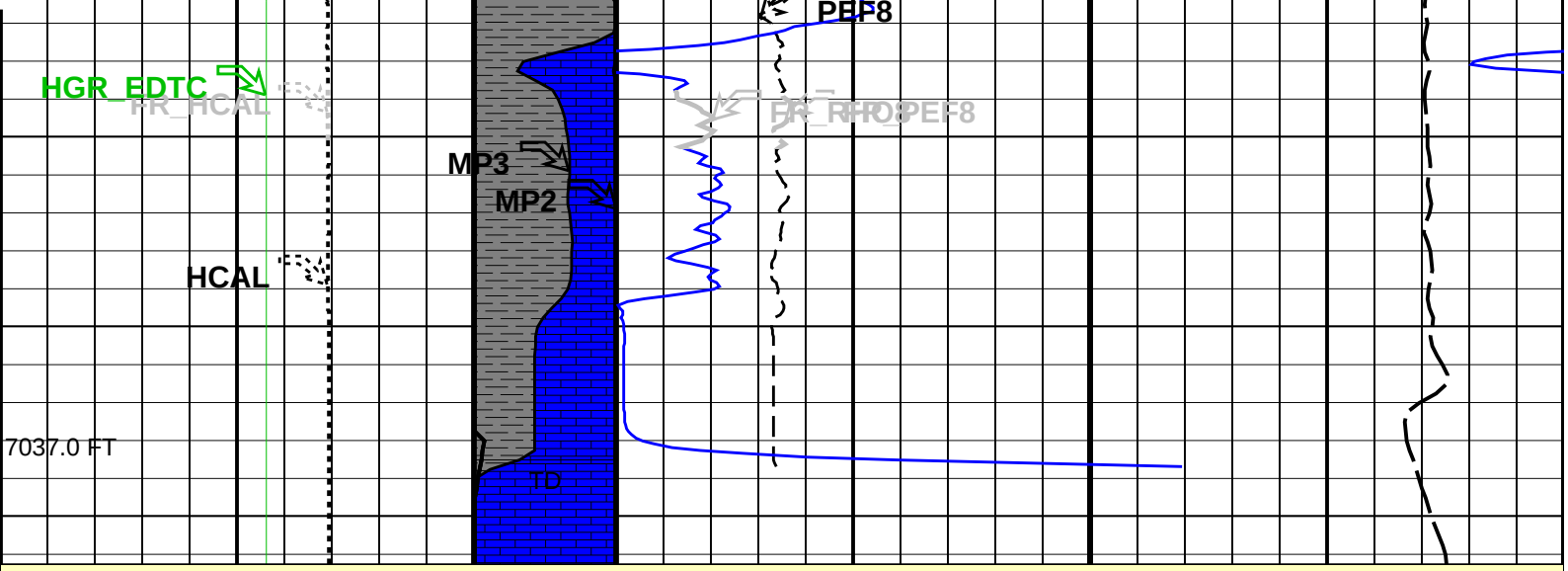

6500
6550
6562.0 FT
MTX CHG


6600
6650


6700
6750
TENS
RHO8
PEF8
HGR_EDTC
MP3
MP2
HCAL
HDRA


6800
6850
6900


6950
7000
TENS
RHOB



MAIN PASS: *** PLATFORM EXPRESS − LITHOLOGY DENSITY ***

HiRes GammaRay (HGR_EDTC)	Stuck Stretch (STIT)	H. Res. Formation Pe (PEF8)	Density Correction (HDRA)
0 (GAPI) 200	0 (F) 50	0 (−−−− 10	−0.25 (G/C3) 0.25
Caliper (HCAL)	LIME	H. Res. Formation Density (RHO8)	
6 (IN) 16		2 (G/C3) 3	
	SAND		Tension (TENS)
			10000 (LBF) 0
	SHALE		

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HILTB−FTB: High resolution Integrated Logging Tool−DTS		
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCLF	Germany Coal−like Formation Option	NO	
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
SHT	Surface Hole Temperature	68	DEGF
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	EDTC−B: Enhanced DTS Cartridge		
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	FEQL: Formation Evaluation Quick Look		
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
	HOLEV: Integrated Hole/Cement Volume		
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
GGRD	Geothermal Gradient	0.01	DF/F

GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
PERT: Preliminary Evaluation − Real Time			
BDPS	Bulk Density Processing Selector	Standard	
BHT	Bottom Hole Temperature (used in calculations)	193	DEGF
CLIM	Caliper Limit for Bad Hole	999	IN
CNPS	Corrected Neutron Porosity Selector	NPHI	
DRUL	DRHO Upper Limit	999	G/C3
FCAL	Caliper Presence Flag	PRESENT	
FCGR	CGR Presence Flag	PRESENT	
FEXP	Form Factor Exponent	2	
FLDT	Bulk Density Presence Flag	PRESENT	
FNUM	Form Factor Numerator	1	
FSON	Sonic Presence Flag	ABSENT	
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
PMAX	PHI Maximum	0.5	CFCF
POUT	Porosity Output Lithology	SANDSTONE	
RG21	RHO Grain (2−Mineral Model, Min−1)	2.71	G/C3
RG22	RHO Grain (2−Mineral Model, Min−2)	2.644	G/C3
RG23	RHO Grain (2−Mineral Model, Min−3)	2.877	G/C3
RG31	RHO Grain (3−Mineral Model, Min−1)	2.71	G/C3
RG32	RHO Grain (3−Mineral Model, Min−2)	2.644	G/C3
RG33	RHO Grain (3−Mineral Model, Min−3)	2.877	G/C3
RTLF	RT Limit Flag	NO_LIMIT	
RWF	Resistivity of Free Water	0.02	OHMM
SHT	Surface Hole Temperature	68	DEGF
UF	U Fluid	0.398	
UM21	U Matrix (2−Mineral Model, Min−1)	13.77	
UM22	U Matrix (2−Mineral Model, Min−2)	4.779	
UM23	U Matrix (2−Mineral Model, Min−3)	8.997	
UM31	U Matrix (3−Mineral Model, Min−1)	13.77	
UM32	U Matrix (3−Mineral Model, Min−2)	4.779	
UM33	U Matrix (3−Mineral Model, Min−3)	8.997	
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth − Driller	7067.00	FT
TDL	Total Depth − Logger	7037.00	FT
System and Miscellaneous			
BS	Bit Size	8.750	IN
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.0117	OHMM
TD	Total Depth	7037	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: Dens_Hires_1 Vertical Scale: 10" per 100’ Graphics File Created: 22−Nov−2011 14:05

OP System Version: 18C0−147

HILTB−FTB	18C0−147	ECS−HP	18C0−147
ECC−B	18C0−147	HNGC−B	18C0−147
HNGS−BA	18C0−147	EDTC−B	18C0−147

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_044PUP	FN:42	PRODUCER	22−Nov−2011 13:19	7042.5 FT	1309.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_004PUP	FN:3	PRODUCER	22−Nov−2011 14:04

Schlumberger

BEFORE CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Electronics Calibration Check − Thru Cal Mag. & Phase							
Before: 22−Nov−2011 0:20							
Thru Cal Magnitude − 0	0	N/A	0.6297	N/A	N/A	N/A	V
Thru Cal Magnitude − 1	0	N/A	1.290	N/A	N/A	N/A	V
Thru Cal Magnitude − 2	0	N/A	0.6397	N/A	N/A	N/A	V
Thru Cal Magnitude − 3	0	N/A	0.7229	N/A	N/A	N/A	V
Thru Cal Magnitude − 4	0	N/A	1.360	N/A	N/A	N/A	V
Thru Cal Magnitude − 5	0	N/A	1.973	N/A	N/A	N/A	V
Thru Cal Magnitude − 6	0	N/A	1.973	N/A	N/A	N/A	V
Thru Cal Magnitude − 7	0	N/A	1.411	N/A	N/A	N/A	V
Phase − 0	0	N/A	52.08	N/A	N/A	N/A	DEG
Phase − 1	0	N/A	51.06	N/A	N/A	N/A	DEG
Phase − 2	0	N/A	47.30	N/A	N/A	N/A	DEG
Phase − 3	0	N/A	46.51	N/A	N/A	N/A	DEG
Phase − 4	0	N/A	40.15	N/A	N/A	N/A	DEG
Phase − 5	0	N/A	38.25	N/A	N/A	N/A	DEG
Phase − 6	0	N/A	38.24	N/A	N/A	N/A	DEG
Phase − 7	0	N/A	34.48	N/A	N/A	N/A	DEG
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Electronics Calibration Check − Auxilliary							
Before: 22−Nov−2011 0:20							
Array Induction SPA Plus	990.5	N/A	993.4	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	N/A	−0.003630	N/A	N/A	N/A	MV
Array Induction Temperature Pl	0.9150	N/A	0.9216	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	N/A	−5.445E−006	N/A	N/A	N/A	V
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Stab Measurement Summary							
Before: 22−Nov−2011 0:22							
BS Window Ratio	0.7410	N/A	0.7416	N/A	N/A	N/A	
BS Window Sum	10310	N/A	10310	N/A	N/A	N/A	CPS
SS Window Ratio	0.4850	N/A	0.4867	N/A	N/A	N/A	
SS Window Sum	9783	N/A	9781	N/A	N/A	N/A	CPS
LS Window Ratio	0.2963	N/A	0.2941	N/A	N/A	N/A	
LS Window Sum	1132	N/A	1125	N/A	N/A	N/A	CPS
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Photo−multiplier High Voltages Calibrations							
Before: 22−Nov−2011 0:22							
BS PM High Voltage (Command)	1509	N/A	1554	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1934	N/A	1955	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1322	N/A	1345	N/A	N/A	N/A	V
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Crystal Quality Resolutions Calibration							
Before: 22−Nov−2011 0:22							
BS Crystal Resolution	11.06	N/A	11.25	N/A	N/A	N/A	%
SS Crystal Resolution	10.94	N/A	11.01	N/A	N/A	N/A	%
LS Crystal Resolution	8.810	N/A	8.846	N/A	N/A	N/A	%
High resolution Integrated Logging Tool−DTS Wellsite Calibration − MCFL Calibration							
Before: 22−Nov−2011 5:46							
Raw B0 Resistivity	3875	N/A	3827	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3801	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	5000	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool−DTS Wellsite Calibration − HILT Caliper Calibration							
Before: 22−Nov−2011 0:19							
HILT Caliper Zero Measurement	8.000	N/A	9.676	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	13.97	N/A	N/A	N/A	IN
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Detector Calibration							
Before: 22−Nov−2011 0:17							
Gamma Ray Background	30.00	N/A	82.52	N/A	N/A	N/A	GAPI
Gamma Ray (Jig − Bkgd)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Zero Measurement							
Before: 22−Nov−2011 0:19							
CNTC Background	28.58	N/A	28.86	N/A	N/A	4.287	CPS
CFTC Background	30.22	N/A	30.88	N/A	N/A	4.533	CPS
High resolution Integrated Logging Tool−DTS Wellsite Calibration − Accelerometer Calibration							
Before: 22−Nov−2011 5:46							
Z−Axis Acceleration	32.19	N/A	31.79	N/A	N/A	N/A	F/S2
Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 1 Check							

Master: 6−Nov−2011 14:53 Before: 6−Nov−2011 15:02

Na 511 Peak Loc	40.00	38.49	38.51	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.21	15.29	N/A	N/A	2.000	%
High Voltage	1150	1025	1025	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	138.2	139.2	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.744	8.622	N/A	N/A	2.000	%
Temperature	59.90	61.08	61.03	N/A	N/A	N/A	DEGF
Na Count Rate	45.00	16.26	16.01	N/A	N/A	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 2 Check
Master: 6−Nov−2011 14:53 Before: 6−Nov−2011 15:02

Na 511 Peak Loc	40.00	39.48	39.65	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.43	14.50	N/A	N/A	2.000	%
High Voltage	1150	969.5	970.8	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	140.2	141.8	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.639	7.786	N/A	N/A	2.000	%
Temperature	59.90	62.29	62.24	N/A	N/A	N/A	DEGF
Na Count Rate	45.00	16.21	15.87	N/A	N/A	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Ratio Of Detector 1 To Detector 2
Master: 6−Nov−2011 14:53 Before: 6−Nov−2011 15:02

Coincidence Count Rate Ratio	1.000	0.9994	1.007	N/A	N/A	0.05000	

Enhanced DTS Cartridge Wellsite Calibration − EDTC Accelerometer Calibration
Before: 22−Nov−2011 5:47

EDTC Z−Axis Acceleration	32.19	N/A	32.01	N/A	N/A	N/A	F/S2

Enhanced DTS Cartridge Wellsite Calibration − Detector Calibration
Before: 21−Nov−2011 23:01

Gamma Ray (Jig − Bkg)	149.3	N/A	149.3	N/A	N/A	13.57	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

The GLS−VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT−B Water Temperature 77.3 DEGF.
Thermal Housing Size 3.371 IN.
NSR−F serial number 5068

High resolution Integrated Logging Tool−DTS / Equipment Identification

Primary Equipment:

Array Induction Tool − H	AIT − H	
Rm/SP Bottom Nose	AHRM − A	
Array Induction Sonde	AHIS − BA	216
HILT high−Resolution Mechanical Sonde	HRMS − B	
HILT Rxo Gamma−ray Device	HRGD − B	
HILT Micro Cylindrically Focused Log Dev	MCFL −	
GR Logging Source	GLS − VJ	5416
HILT High Res. Control Cartridge	HRCC − B	

Auxiliary Equipment:

High resolution Integrated Logging Tool−DTS Wellsite Calibration
Electronics Calibration Check − Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Before	0.6297		0.6050	52.08		71.00
1	Before	1.290		1.270	51.06		70.00
2	Before	0.6397		0.6230	47.30		66.00
3	Before	0.7229		0.7040	46.51		65.00
4	Before	1.360		1.337	40.15		59.00
5	Before	1.973		1.955	38.25		57.00
6	Before	1.973		1.955	38.24		57.00
7	Before	1.411		1.415	34.48		53.00

		60.00 %		140.0 %		Nom −60.00		Nom + 60.00	
		(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)	

Before: 22−Nov−2011 0:20

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Electronics Calibration Check − Auxilliary

Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Before		993.4	Before		−0.003630
	941.0 (Minimum) 990.5 (Nominal) 1040 (Maximum)			−50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	
Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Before		0.9216	Before		−5.445E−00
	0.8700 (Minimum) 0.9150 (Nominal) 0.9600 (Maximum)			−0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	

Before: 22−Nov−2011 0:20

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Stab Measurement Summary

Phase	BS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value
Before		0.7416	Before		0.4867	Before		0.2941
	0.7039 (Minimum) 0.7410 (Nominal) 0.7780 (Maximum)			0.4608 (Minimum) 0.4850 (Nominal) 0.5093 (Maximum)			0.2815 (Minimum) 0.2963 (Nominal) 0.3111 (Maximum)	
Phase	BS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before		10310	Before		9781	Before		1125
	9793 (Minimum) 10310 (Nominal) 10820 (Maximum)			9294 (Minimum) 9783 (Nominal) 10270 (Maximum)			1075 (Minimum) 1132 (Nominal) 1188 (Maximum)	

Before: 22−Nov−2011 0:22

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Photo−multiplier High Voltages Calibrations

Phase	BS PM High Voltage (Command) V	Value	Phase	SS PM High Voltage (Command) V	Value	Phase	LS PM High Voltage (Command) V	Value
Before		1554	Before		1955	Before		1345
	1409 (Minimum) 1509 (Nominal) 1609 (Maximum)			1834 (Minimum) 1934 (Nominal) 2034 (Maximum)			1222 (Minimum) 1322 (Nominal) 1422 (Maximum)	

Before: 22−Nov−2011 0:22

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Crystal Quality Resolutions Calibration

Phase	BS Crystal Resolution %	Value	Phase	SS Crystal Resolution %	Value	Phase	LS Crystal Resolution %	Value
Before		11.25	Before		11.01	Before		8.846
	10.06 (Minimum) 11.06 (Nominal) 12.06 (Maximum)			9.943 (Minimum) 10.94 (Nominal) 11.94 (Maximum)			7.810 (Minimum) 8.810 (Nominal) 9.810 (Maximum)	

Before: 22−Nov−2011 0:22

High resolution Integrated Logging Tool−DTS Wellsite Calibration

MCFL Calibration

Phase	Raw B0 Resistivity OHMM	Value	Phase	Raw B1 Resistivity OHMM	Value	Phase	Raw B2 Resistivity OHMM	Value
Before		3827	Before		3801	Before	EXCEEDS LIMIT	5000
	3565 (Minimum) 3875 (Nominal) 4185 (Maximum)			3524 (Minimum) 3830 (Nominal) 4136 (Maximum)			3524 (Minimum) 3830 (Nominal) 4136 (Maximum)	

Before: 22−Nov−2011 5:46

High resolution Integrated Logging Tool−DTS Wellsite Calibration

HILT Caliper Calibration

Phase	HILT Caliper Zero Measurement IN	Value	Phase	HILT Caliper Plus Measurement IN	Value
Before		9.676	Before		13.97
	6.000 (Minimum) 8.000 (Nominal) 10.00 (Maximum)			9.000 (Minimum) 12.00 (Nominal) 15.00 (Maximum)	

Before: 22−Nov−2011 0:19

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig − Bkgd) GAPI	Value
Before		82.52	Before		165.0
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)			157.1 (Minimum) 165.0 (Nominal) 206.3 (Maximum)	

(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)

Before: 22−Nov−2011 0:17

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Before		28.86	Before		30.88
	5.000 (Minimum) 28.58 (Nominal) 40.00 (Maximum)			5.000 (Minimum) 30.22 (Nominal) 40.00 (Maximum)	

Before: 22−Nov−2011 0:19

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Accelerometer Calibration

Phase	Z−Axis Acceleration F/S2	Value
Before		31.79
	31.53 (Minimum) 32.19 (Nominal) 32.84 (Maximum)	

Before: 22−Nov−2011 5:46

Elemental Capture Cartridge − B / Equipment Identification

Primary Equipment:	
ECC Cartridge	ECC − B
Auxiliary Equipment:	
ECC Housing	ECH − A

Hostile Natural Gamma Ray Cartridge − B / Equipment Identification

Primary Equipment:	
HNGC Cartridge	HNGC − B
Auxiliary Equipment:	
HNGC Housing	HNGH − A

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:	
HNGS Sonde	HNGS − BA
Auxiliary Equipment:	
HNGS Sonde Housing	HNSH − BA
Gamma Source Radioactive	GSR − U

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		38.49	Master		15.21	Master		1025
Before		38.51	Before		15.29	Before		1025
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGF	Value
Master		138.2	Master		8.744	Master		61.08
Before		139.2	Before		8.622	Before		61.03
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			−20.00 (Minimum) 59.90 (Nominal) 140.0 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		16.26
Before		16.01
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 6−Nov−2011 14:53 Before: 6−Nov−2011 15:02

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		39.48
Before		39.65
37.50 (Minimum)	40.00 (Nominal)	43.50 (Maximum)

Phase	Na 511 Peak Res %	Value
Master		15.43
Before		14.50
12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)

Phase	High Voltage V	Value
Master		969.5
Before		970.8
900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)

Phase	Na 1785 Peak Loc	Value
Master		140.2
Before		141.8
135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)

Phase	Na 1785 Peak Res %	Value
Master		8.639
Before		7.786
7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)

Phase	Temperature DEGF	Value
Master		62.29
Before		62.24
−20.00 (Minimum)	59.90 (Nominal)	140.0 (Maximum)

Phase	Na Count Rate CPS	Value
Master		16.21
Before		15.87
10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 6−Nov−2011 14:53 Before: 6−Nov−2011 15:02

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		0.9994
Before		1.007
0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)

Master: 6−Nov−2011 14:53
Before: 6−Nov−2011 15:02

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:

EDTC Gamma Ray Detector	EDTG − A/B
Enhanced DTS Cartridge	EDTC − B

Auxiliary Equipment:

EDTC Housing	EDTH − B

Enhanced DTS Cartridge Wellsite Calibration

EDTC Accelerometer Calibration

Phase	EDTC Z−Axis Acceleration F/S2	Value
Before		32.01
31.53 (Minimum)	32.19 (Nominal)	32.84 (Maximum)

Before: 22−Nov−2011 5:47

Enhanced DTS Cartridge Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value
Before		78.18
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)

Phase	Gamma Ray (Jig − Bkg) GAPI	Value
Before		149.3
135.7 (Minimum)	149.3 (Nominal)	162.9 (Maximum)

Phase	Gamma Ray (Calibrated) GAPI	Value
Before		165.0
150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)

Before: 21−Nov−2011 23:01

Company:	**Carrizo Oil & Gas Inc**
Well:	**Barracuda 20−14−7−60**
Field:	**Wildcat**
County:	**Weld**
State:	**Colorado**

Schlumberger

Platform Express
Compensated Neutron
Litho Density